NIGAT KOKEE	B PP, PRIMERY AN	D MIDDLE SCHOOL	. (2017 E.C)
GRADE – 8 MATHEMA	ATICS	Number	of Item: 500
1) What is the solution	n set of $2 x - 4 + 6 = 10$?	,	
A. {6,2}	B. {-2	C. {-10,2}	D. {-2,10}
2) The simplified form	$n \text{ of } \frac{3}{5} + \frac{4}{9} \left(\frac{1}{5} \div \frac{2}{5} \right) \text{ is }$		
A. $\frac{37}{45}$	B. $\frac{1}{2}$	C. $\frac{27}{42}$	D. $\frac{17}{45}$
3) Which one of the fo	bllowing absolute value equ	ation has no solution?	45
A. $-3 x+6 $	=-9 B. $ 2x - 4 -6=-10$	C. $ x - 4 - 10 = -10$	D. $ x - 6 = 4$
4) The sum of the first	201 consecutive odd natur	al numbers is	
A. 402	B. 22311	C. 2211	D. 22131
5) $(379)^2 - (378)^2 = $			
A. 767	B. 768	C. 757	D. 765
6) Which one of the fo	bllowing fraction is in betwe	een -6 and -5	
A. $\frac{-27}{5}$	B. $\frac{-34}{5}$	C. $\frac{-21}{5}$	D. $\frac{19}{3}$
7) $-4\frac{5}{2}$ in mixed fra	ction form is		
A. $\frac{-19}{6}$	B. $\frac{-28}{6}$	C. $\frac{29}{6}$	D. $\frac{19}{3}$
8) Which one of the f	ollowing fraction can be re	presented on a number line	the left side of the other
number?			
A. $\frac{3}{5}$	B. $\frac{-3}{5}$	C. $\frac{-9}{4}$	D. $-\frac{3}{2}$
9) If $x = 5$ and $y = 3$ the	en the simplified form of $\frac{ 2 }{ 2 }$	$\frac{x - 3x-y }{ 2x-3y }$ is	
A. 10	B2	C. 1	D12
10) Which of the follo A. $\left \frac{-5}{3}\right > \frac{3}{2}$ 11) Which one of the	by b	C. $-4\frac{1}{2} = \frac{-9}{2}$	D. All are correct
A. Rational r	numbers always commutativ	ve under division	
B. Rational r	numbers always closed unde	er division.	
C. Division l	by zero is impossible for the	e set of rational numbers.	
D. Rational r	numbers always associative	under division.	
12) Which of the follo	owing statement is true in th	ne set of numbers?	
A. $\frac{12}{3} \in N$	B. 0.3 ∈ <i>Q</i>	C6 $\in Z^-$	D. All
13) The sum of two ra	ational numbers is 7. If one	of the numbers is $\frac{2}{5}$, then the	other number is
A. $\frac{33}{5}$	B. $\frac{37}{5}$	C. $\frac{31}{5}$	D. $\frac{32}{5}$
14) Which of the follo	owing statement is true about	at the set of numbers denoted	l by N,W and Z?
A. $Z^- \subseteq Z^+$	B. $W \subseteq N$	$\mathrm{C.}N\subseteqZ^-$	D. $N \subseteq Z^+$

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15) What nur	nber should be	added to $\frac{-7}{9}$ so as to get $\frac{-7}{3}$	$\frac{4}{3}?$	
A	<u>19</u> 9	B. $\frac{5}{9}$	C. $\frac{-5}{9}$	D. $\frac{19}{3}$
16) A drum f	ull of rice wei	ghts $\frac{234}{5}$ kg. If the empty d	frum weighs $\frac{64}{6}$ kg, what	at is the weight of rice in the
drum?				
A. $\frac{54}{1}$	12 5	B. $\frac{1084}{15}$	C. $\frac{542}{33}$	D. $\frac{542}{31}$
17) A cord of	length $\frac{143}{2}m$	has been cut in to 26 piece	es of equal length. What	at is the length of each piece?
A. $\frac{13}{2}$	<u>34</u>	B. $\frac{143}{52}$	C. $\frac{144}{5}$	D. $\frac{133}{5}$
18) Which or	e of the follow	ving is false?		
Α. Τ	he sum of two	negative number is negati	ive	
В. Т	he product of	an odd number of negative	e factors is negative	
C. If	the sign of the	e divided and the divisor a	re different, the sign o	f the quotient is negative
D. T	he product of	an even number of negativ	ve factors is negative	
19) Abera dej	oosited birr 20	00 in a bank and after 6 m	onth he collected birr	2120. What was the rate of
simple int	erest the bank	paid per annum?		
A. 1)%	B. 12%	C. 11%	D. 9%
20) W/ro Hel	en deposited b	oirr 4000 in a bank 8% sin	mple interest per annu	m. In how many years will
her amou	nt be birr 4960	?		
A. 5	years	B. 8 years	C. 3 years	D. 7 years
21) There are	36 students in	a class and $\frac{2}{3}$ of them are	female students. How	many students are male?
A. 1	2	B. 24	C. 18	D. 30
22) If $(8.23)^2$	=67.73 then w	hat is the value of (82.3)?		
A. 6	77.3	B. 6.773	C. 6773	D. 0.6773
23) Which or	e of the follow	ving statement is true?		
Α. Τ	he square of o	dd number is odd		
В. Т	he square of e	ven number is even		
С. Т	he product of	square numbers is a square	e number	
D. A	ll are true			
24) The squar	the root of $\frac{49}{121}$ i	S		
A. $\frac{11}{7}$	-	B. $\frac{49}{11}$	C. $\frac{7}{11}$	D. $\frac{7}{121}$
25) The area	of square is 22	5m^2 , what is the length of	each side?	
A. 1	5m	B. 25m	C. 35m	D. 10

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26) If $(7.92)^2 = 62.7$	3then what is the square root	of 0.6273?	
A. 732	B. 79.2	C. 0.792	D. 7.92
27) Which one of t	he following is true about orde	er of numbers?	
A3 is th	e right side of -1	C. $\frac{-3}{4}$ is the right side of	of -1
B10 is t	he left side of -11	D121 is the left side	of -162
28) Positive proper	fraction always exist between	n	
A. 1 and 1	2 on the number line	C. 3 and 4 on the numb	ber line
B. 0 and 1	on the number line	D1 and 0 on the num	ber line
29) Which one of t	he following number is not pe	erfect square?	
A9	B. 0	C. 16	D. 0.04
30) Which one of t	he following is both square an	nd cube number?	
A64	B1	C. 64	D. 100
31) A rational num	ber K is called a perfect squar	re, is and only if, for some $n \in$	Q^+ k is equal to:
A. n^2	B. n ³	C. 2n	D. $\frac{16}{54}$
32) The value $\sqrt[3]{\frac{32}{10}}$	is		
A. $\frac{3}{2}$	B. $\frac{8}{27}$	C. $\frac{2}{3}$	D. $\frac{16}{54}$
33) Which of the fe	ollowing statement is true abo	ut the cube root?	
A. $\sqrt[3]{\frac{-64}{27}} =$	$=\frac{4}{3}$ B. $\sqrt[3]{\frac{-1}{125}}=\frac{1}{5}$	C. $\sqrt[3]{-0.001} = -0.1$	D. $\sqrt[3]{\frac{-8}{27}} = \frac{2}{3}$
34) What is the squ	are root of the number 0.0002	256?	
A. 0.16	B. 0.016	C. 1.6	D. 160
35) The volume of	a cube is $216m^3$. What is the	surface area of a cube?	
A. 216m ²	B. 144m ²	C. 218m ²	D. 512m ²
36) The number 30	0 in power form is		
A. $2^2 x 3^2 x$	5 B. $2^2 x 3^2 x 5^2$	C. $2^2 x 3 x 5^2$	D. $2^3 x 3 x 5^2$
37) Which of the fe	ollowing is not true about squa	are or cube number?	
A. Cube n	umber can be negative		
B. Square	number can be negative		
C. Cube n	umber can be positive		
D. Square	number can be positive		
38) The square of t	he number 8.58 using rough c	calculation is	
A. 64	B. 75.69	C. 81 D. 73	.2756

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39) Which one of the following statement is True?				
A. $-5^3 = 125$	B. $0^3 = 3$	C. $(-5)^3 = -125$	D. (-6) ² =-36	
40) If $x < 0$ and $y > 0$, then the	point lies on	quadrant.		
A. I	B. IV	C. III	D. I	
41)In which quadrant (-2,7)	located?			
A. II	B. III	C. I	D. IV	
42)The point is located 6 un	nits to the left of the	y-axis and 4 units bel	ow the x-axis, then what is the	
coordinates of the point.				
A. (6,4)	B. (-6,-4)	C. (6,-4)	D. (-6,4)	
43)Which one of the followi	ing graph of an equation	on that passes through	the origin?	
A. 2x-5=7	B. 3y-6=4	C. 2x-5y=0	D. 3x-2y+6=0	
44)Which one of the followi	ing statement is correc	et?		
A. The line $y=5x-2$ i	s a vertical line.			
B. The line $x+5=4$, i	s a horizontal line.			
C. The line $5y+7=6$	is a horizontal line			
D. All are correct				
45)The equation y=5. Then	which one of the follo	wing is true?		
A. x is constant	B. y carries	C. x and y vary	D. y is constant	
46) The equation $y=-4x$, then	which point satisfy th	he equation?		
A. (-2,8)	B. (0,0)	C. (-1,4)	D. all points satisfy	
47)If the point k (d,5) lies or	n the line given by the	equation 6x-y=0, the	n what is the value of d?	
A. $\frac{-5}{6}$	B. 6	C. $\frac{5}{6}$	D. 11	
48)The graph of the line y=r	nx(m∈Q,m≠0) passes	s through the II and IV	quadrant if m is	
A. Negative	B. Positive	C. Zero	D. any number	
49)When we translate, five times a number deceased by six is at least twenty two.				
A. 6-5d≤22	B. 5d-6≥ 22	C. 5d+6≥ 22	D. 5d-22≥ 6	
50)Which one of the following inequality is equivalent to $-3x-6>12$?				
A. x+6<4	B. x+2<-4	C. x-2<4	D. x+4>-2	
51) The sum of the ages of the father and his son is 68 years. The father is 22 years older than his son.				
How old is the father?				
A. 23 years	B. 45 years	C. 32 years	D. 54 years	

52) Four years ago a mother's age exceeded at least three times her daughter's age. If the mother is 52 years old now, then what is the possible present age of the daughter?

A. The daughter's age is less than or equal to 30 years.

B. The daughter's age is less than 20 years.

C. The daughter's age is less than 15 years.

D. The daughter's age is less than or equal to 20 years

53) What is the solution set of the inequality $-3(x-4) \ge 2x-8$ in the set of w?

A. {1,2,3,4, } B. {0,1,2,3} C. {0,1,2,3,4} D. {1,2,3}

54) The relationship between the temperature reading in Celsius scale c and Fahrenheit scale F is given

by $C = \frac{5}{9}(F - 32)$, what interval on the Celsius scale corresponds to the temperature of 59 < F?

A. C>20 B. C>15 C. C>25 D. C>30

55) What is the solution set of the inequality $4x-8 \ge 2(2x+6)$?

A. {0} B. Ø C. {8,9,10,11,12} D. any rational numbers

56) Which one of the following graph has negative slope?



57)Consider the equation y=-3x-2 then, what is the value of y when the value of x is -2?

B. -4 C. -8 A. 8 D. 4 58)If x<-4, then 4-x____8 B. > C. < A. ≤ D. > 59) Which one of the following pairs of figures are always similar? A. Any two circles C. any two squares B. Any two equilateral triangles D. all 60) Given ΔLMN and ΔDEF , if $\frac{LM}{DE} = \frac{MN}{EF} = \frac{LN}{DF}$, then which of the following shows that $\Delta LMN \sim \Delta DEF$? C. SSS similarity theorem A. AA similarity thermo B. SAS similarity theorem D. All 61) The sides of a polygon are 3cm, 6cm, 7cm, 9cm and 11cm. the largest side of larger polygon is 33cm. what is the smallest side of larger polygon? A. 6cm B. 9cm C. 4cm D. 18cm

62) The ration of the area of two similar polygons is 49:64. What is the ratio of their corresponding sides?

A. 49:8 B. 7:64 C. 7:8 D. 7:4

63)In the figure below \overline{MN} // DE. If \overline{CM} =5cm, \overline{DE} = 6cm and \overline{CN} =4cm, then what is the length of \overline{CD} ?



71) The ratio of the corresponding sides of similar quadrilaterals is 9:16 what is the ratio of the area of			
triangles?			
A. 3:4	B. 81:256	C. 4:3	D. 256:81
72) The perimeters of two sites	imilar polygons are 20cm	and 36cm respectivel	y. If one side of the second
triangle is 9cm, then wh	at is the length of the corre	esponding side of the	first triangle?
A. 5cm	B. 4cm	C. 10cm	D. 15cm
73) Which one of the follow:	ing two square numbers gi	ves another square nu	mber when we add them?
A. 64 and 36	B. 16 and 36	C. 9 and 25	D. A and B
74) What is the simplified for	orm of $\frac{\sqrt[3]{-27}}{\sqrt[3]{64}}$?		
A. $\frac{3}{4}$	B. $\frac{-4}{3}$	C. $\frac{-3}{4}$	D. $\frac{4}{3}$
75) If (6.43)2=41.34, then w	hat is the square root of 0.4	4134?	
A. 64.3	B. 643	C. 0.643	D. 6.43
76) What is the sum of the fi	rst 52 odd natural numbers	s?	
A. 2074	B. 104	C. 2740	D. 2704
77) What is the solution set of	of 2-4/x-3/=-10?		
A. Ø	B. {0,6}	C. {6}	D. {-6,0}
78) The simplified form of $\frac{\frac{2}{3}}{\frac{5}{6}}$	$ \begin{array}{c} \div \left(\frac{1}{2} + \frac{4}{5}\right) \\ + \frac{1}{3} \left(\frac{2}{3} \div \frac{4}{3}\right) \end{array} $		
A. $\frac{20}{30}$	B. 1	C. $\frac{20}{33}$	D. $\frac{1}{2}$
79)How long will take birr 2	2000 to get birr 600 simple	e interest at rate of 10%	6?
A. 3 years	B. 4 years	C. 5 years	D. 2 years
80)If $x = -4$ and $y = 2$, then w	what is $\frac{3 x-y - 3y }{ y-x }$		
A. 2	B. 3	C. 4	D. 6
81) One of the following is	Not a regular polygon?		
A. equilateral trian	gle B. rectangle	C. square	D. regular pentagon
82) If 6X, 6X, 7X, 4X, 5X a	and 8X are interior angles	of a six sided polygor	what is the largest angle in
degree?			
A. 160 ⁰	B . 120 ⁰	C. 140°	D. 60°
83) In the figure If m (<ad< td=""><td>B) = 66° then what is m (<</td><td>(ABC)?</td><td></td></ad<>	B) = 66° then what is m (<	(ABC)?	
A. 65 ⁰		С	
B. 25 ⁰		A	В
C. 115 ⁰			1-
D. 33 ⁰		D	

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84) In the figure given below O is the center of the circle if m ($\langle PQR \rangle = 25^{\circ}$ then what is m(<POR)? A. 100° Ρ B. 50° n 0 C. 75⁰ D. 90° R 85) In the figure below O is the center of the circle. What is the measure angle of (<ACB)? A. 36⁰ **B**. 10⁰ C. 40^{0} В D. 180° 86) What is the measure of angle BPD? A. 20° А D B. 120° Ρ C. 100° $60^{0} 40^{0}$ D. 105⁰ В 87) One letter is chosen at random from the word INTRODUCTION? What is the probability to choosing the letter I? A. 1/12 B. 1/6 C. 1/4 D. 1/3 88) If a number is chosen at random from the lists of number 2, 3, 4, 7, 11, 13, 17, 19 then what is the probability that is not getting composite? A. 1 **B**. 0 C. 7/8 D. 1⁄2 89) A pair of dice is rolled what is the probability that the sum of the numbers observed is 5? A. 1/9 B. 2/9 C. 8/9 D. 1 90) A pair of fair dice is tossed what is the probability of not getting a sum 5 or 9? A. 2/9 B. 8/9 C. 7/9 D. 1/9 91) The area of a trapezium given below is 45 cm^2 . If the bases of the trapezium are $b_1 = 4 \text{ cm}$ and $b_2 =$ 6cm long, then what is height of the trapezium? A. 6cm $b_1 = 4cm$ B. 8cm C. 10cm D. 9cm $b_2 = 6 cm$

92) Two triangles are similar corresponding side of the triangle?	. The length of a sid other. What is the ra	e of one triangle is 5 t tio of the area of the la	imes that of the length of the rger to the area of the smaller
A. 5:1	B. 10:1	C. 25:1	D. 1:5
93) The ratio of the area of	the two similar tria	ingles is 25:4. What is	ratio of their corresponding
perimeters (sides)?			
A. 16:25	B. 2:5	C. 1:5	D. 5:2
94) In the figure below KL \perp	LN, ON \perp LN and k	K,M and O are on the sa	me line. If $\Delta KLM \sim \Delta ONM$,
then which of the following	ng theorem prove the	similarity?	
A. ASA theorem	k		
B. AA theorem			
C. SSS theorem			MN
D. SAS theorem]		\searrow_0
95) The ratio of the sides of tw	wo similar polygons i	s 4:5 if the area of the l	arger polygon is 100cm ² , then
what is the area of the sma	aller polygon?	2	2
A. 100cm^2	$B.75 cm^2$	C. 64 cm ²	D. 80cm^2
96) If $\sqrt{5} = 2.24$, then what is	$\sqrt{50000}$?		
A. 22.4	B. 224	C. 0.224	D. 0.0224
97) Which one of the following	ng absolute value equa	ation has two solution?	
A. $3 - 3 / x - 5 / = 6$		C. $-2/8x - 5/= -20$	
B. $/4 - x/-6 = -6$		D. / x – 5/ + 2 / x – 5/	+ 6 = 6
98) What is the numerical coe	fficient of the term $\frac{-\alpha}{2}$	<u>de</u> ?	
A1	B. $-\frac{1}{4}$	C. 4	D. $\frac{-1}{5}$
99) What is the solution set of	the inequality $\frac{2}{3}x - \frac{2}{3}x - \frac{2}{$	$1 < \frac{2}{3}x - \frac{1}{6}$ in the set of	integers?
A. { }	B. {1,2,3,4}	C. the set of all intege	ors D. {3,4,5}
100) Which one of the follow	ing is equal to the pro	oduct (- 4 – 2 x) (- x - 2)	?
A. $2x^2-8$	B. $2x^2 + 8$	C. $2x^2 + 8x + 8$	D. $-2x^2 - 8$
101) The simplified form of 2	$2\sqrt{6}\left(\frac{3}{\sqrt{6}}+\sqrt{6}\right)$ is		
A. 6	B. 12	C. 18	D.16
102) Which one of the follow	ing is an equation of	a line that passes throug	h the point (-3,1)?
A. $3y + 2x = 9$	B. $3y - 2x = 9$	C. $4x - 5y = -8$	D. $2x - 2y = 3$
103) Which one of the follow	ing pairs of points ha	s positive slope?	
A. (2,4) and (2,-4)	B. (3,2) and (-3,2)	C. (-5,1) and (3,-2)	D. (1,-5) and (2,3)

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104) Which	one of the follow	ring equation has verti	cal line?	
A.	3x = 2y	B. Y =3	C. $2x = 5$	D. $-2y = 8x$
105) A mer	chant gained $6\frac{1}{2}$ %	6 profit by selling an a	article for birr 1,278. What	at was the original price of
the art	icle?			
A.	1220 birr	B. 1200birr	C. 1118 birr	D. 1020 birr
106) Which	one of the follow	ring is an example of b	both sector and segment?	
A.	Semicircle	B. Minor arc	C. Major arc	D. All
107) A ladd	er of length 12m	rests against a wall so	that the angle between th	e ladder and the wall is 60° .
How fa	ar is the base of th	e ladder from the wall	1?	
A.	$3\sqrt{3}m$	B. $6\sqrt{3}m$	C 4 $\sqrt{3}$ m	D. $12\sqrt{3}m$
108) In the	figure below ΔAB	<i>C</i> is a right angled tri	angle with $\overline{CD} \perp AB$, if	$\overline{AD} = 9$ cm and DB = 16cm,
then w	hich one of the fo	llowing is true?		
A.	The length of \overline{A}	$\overline{C} = 14cm$	C	
B.	The length of Cl	D = 14 cm		、
C.	The length of C	B = 18 cm		
D	The area of Δ A	$BC = 150 cm^2 \qquad A$	hh	
109) If the c	liagonal of a squa	re is $12\sqrt{2}$ cm long, w	hat is the area of the squa	re?
A.	48cm^2	B. 144 cm ²	C. 121 cm^2	D. 44 cm^2
110) If the	measure of the an	ngles of a triangle are	e 9y, 10y and 11y, then	what is the measure of the
smalle	st angle?			
A.	60^{0}	B. 66^{0}	C. 54 ⁰	D. 45 ⁰
111) What is	s the exterior angle	e of an equilateral trian	ngle?	–
A.	120°	B. 60°	C. 100°	D.80°
112)The me	easure of the three	interior angles of a tr	fiangle are in the ration 5:	6:7. What is the measure of
the lar	gest interior angle	s of a triangle?		7 0 ⁰
A.	50°	B. 60°	$C. 80^\circ$ D.	. 70°
113) In the f	igure below, what 50°	1s the measure of x ?	\wedge	
A. D	50 65 ⁰			
D. C	100^{0}			
с. л	80 ⁰	X	*	
D.	50	\sim	/	

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114) In the figure below, $\triangle ABC$ is a right angled triangle, \overline{DC} is the altitude to the hypotenuse \overline{AB} of \triangle ABC. If AD=4cm and DC=8cm, then what is length of \overline{BD} A. 16cm B. 64cm D C. 12cm С D. 15cm 115) In the figure below, ΔDEF is right angle at E. if m< (DFE)=45⁰ and DF=8cm then what is the length of EF A. 2cm D B. $4\sqrt{2}$ cm C. $4\sqrt{3}$ cm D. $3\sqrt{2}$ cm E 116) Which one of the following three sides of a triangle can form a right angled triangle? C. 10cm,6cm,8cm A. 5cm,12cm,13cm B. 9cm,16cm,25cm D. all 117) A man travels 10km due west, 6km due north and 2km due east. How fat is the man now from the starting place? B. 5km C. 10km D. 6km A. 2km 118) What is the length of the sides of a rhombus whose diagonals are 10cm and 24cm? A. 13cm B. 14cm C. 10cm D. 5cm 119) A rectangle has its sides 9cm and 12cm long. What is the length of its diagonals? A. 13cm **B**. 14cm C. 15cm D. 16cm 120) In the figure below, O is the center of the circle. Which of the following statement is NOT true? A. <ABD is an acute angle B. <DCB is a right angle C. BAC is a minor arc D. $M(\langle DCA \rangle = m(\langle ABD \rangle)$ 121) If the side of an equilateral triangle is 10cm then what is the area of the triangle? A. $10\sqrt{3}$ B. $5\sqrt{3}$ C. $2\sqrt{3}$ D. $3\sqrt{3}$ 122) If a line intersects a circle at exactly one point, then the line is: A. A secant of the circle C. center of the circle B. Point of tangency D. a tangent of the circle 11

123) In the circle below, if $m(XY) \ 80^{\circ}$ and $m(UV)=70^{\circ}$, then what is m(<z)

- A. 75⁰
- B. 105° 80
- C. 70°
- $D_{\rm x} 80^0$ X $Y_{\rm U}$

124) A part of a circle which is greater than semicircle is

A. Segment B. Minor arc C. major arc D. sector

125) Which of the following statement is True about inscribes angles in a circle.

- A. Inscribes angles subtended by the same arc are congruent
- B. An inscribed angle is an angles with its vertex on the circle and whose sides contain chords of the circle.
- C. The measure of an inscribed angle is on e-half of the measure of its intercepted arc
- D. All
- 126) The total surface area of a cube is 96 cm^2 . What is its volume?

A. $64cm^3$ B. $16cm^3$ C. $36cm^3$ D. $24cm^3$

127) In the figure below, the measure of the arc XYZ is 260° . What is the value of $\langle XWZ \rangle$?

- A. 50°
- **B.** 100°
- C. 120°
- D. 30⁰

128) A circle is divided in to three arcs in the ratio 4:5:6. The points of division are joined to form a triangle. What is the smallest angle of the triangle?

A. 90^{0} B. 96^{0} C. 72^{0} D. 108^{0} 129) In the figure below, \overline{AB} is a diameter and m (BDC) =130⁰. What is m (<ABC)?

A. 50⁰



130) The base of a triangular prism is $\triangle ABC$, where AB=5cm, BC=12cm and AC=13cm. If the height h of the prim is 4cm. what is the lateral surface area?

A. 90cm ²	B. $120 cm^2$	C. 130cm^2	D. 100cm^2

131)	The lateral surface area of	of a right circular cyli	nder is $160\pi m^2$ and the o	liameter of the base is 16m.	
	What is the altitude of the cylinder?				
	A. 12m	B. 8m	C. 9m D	. 10m	
132)	The base of a right triang	ular prism is right ang	gled triangle. If the heigh	t of this prism is 8m and the	
	shortest and longest side	of the base are 6m and	nd 10m respectively, then	n what is the volume of this	
	prism?				
	A. 192m ²	B. 24m ²	C. 384m ² D	. 124m ²	
133)	What are the height of th	e cylinder with diame	ter 6cm and a volume of 7	$72\pi \mathrm{cm}^3$?	
	A. 3cm	B. 8cm	C. 6cm D	. 4cm	
134)	A is a polygon in wh	nich the base is a poly	gon and the lateral face	are triangles with a common	
	vertex.				
	A. cone	B. prism	C. pyramid	D. cylinder	
135)	The sum of the height an	d the radius of a righ	t circular cylinder is 11c	m, if the surface area of the	
	cylinder is $110\pi m^2$, then y	what is the height of the	he cylinder?		
	A. 5cm	B. 4cm	C. 3cm	D. 6cm	
136)	What is the height of a red	ctangular prism that h	as a base dimension of 4c	em and 9cm and a volume of	
	360cm ³ ?				
	A. 20cm	B. 10cm	C. 9cm	D. 12cm	
137)	The base of prism is an e	equatorial triangle eac	ch of whose sides measur	e 8cm. if the altitude of the	
	prism measures 6cm, then	n what is the volume o	f the prism?		
	A. $16\sqrt{3}cm^3$	B. $96\sqrt{3}cm^3$	C. $48\sqrt{3}cm^3$	D. $192\sqrt{3}cm^{3}$	
138)	In the figure below, ΔAE	BC is a right angles tr	iangle with \overline{CD} the altitude	de on the hypotenuse. If \overline{CD}	
	$\perp \overline{AB}$, then which of the f	following is NOT true	?		
	A. BC = $\sqrt{AB \ XBD}$	C			
	B. $AC^2 = AD X AB$				
	C. $CD = AD X DB$				
	D. $AB^2 = AC^2 + BC$	A^2 A D	В		
139)	The height and diameter	of the right circular cy	vlinder is 10cm. what is t	he lateral surface area of the	
	right circular cylinder?				
	A. $200\pi cm^2$	B. $50\pi cm^2$	C. $100 \pi cm^2$	D. $150 \pi cm^2$	
140)	The volume of a cube is	$1000 \mathrm{m}^3$. What is the t	otal surface area of the cu	be?	
	A. 60m ²	B. $400m^2$	C. $600m^2$	D. 200m ²	

141) The	sum of the ages of a f	Cather and his son is 74	4. Four years ago the fathe	er's age was twice as old as	
his s	on. How old is this so	n?			
	A. 26 years	B. 24 years	C. 52 years	D. 32 years	
142) If √	$\overline{m+12}=6$, then what	is the value of m?			
	A. 12	B. 24	C. 14	D. 16	
143) If (2	$(2.56)^2 = 6.5536$, then w	hat is the value of (25	$(.6)^2?$		
	A. 65.553	B .65536	C. 655.36	D. 6553.6	
144) Wh	at is the solution set o	f the equation $-3 x - \frac{1}{2} x - \frac{1}{2$	4 +2 = -10?		
	A. {0, -8}	B. {8}	C. {-8}	D. {0,8}	
145) The	sum of the first 101 c	consecutive even natur	ral numbers is		
	A. 10302	B. 10,201	C. 12,001	D. 10203	
146) If (a	, 0) lies on the line -2	x+4y=8, then what is	the value of a?		
	A. 4	B4	C. 8	D8	
147) Whie	ch one of the followin	g point lies on the line	e 3x-2y=6?		
	A. (2,0)	B. (-2-6)	C. (0,-3)	D. all	
148) The	ratio of the area of ty	wo similar triangle is	49:121. What is the ratio	of their corresponding	
perir	neters?				
	A. 49:11	B. 7:11	C. 7:121	D. 7:12	
149) In th	e figure below if EF=	3m, FG=6m and \overline{IH} =4	4m. What is the value of E	H	
	B. 2m		G		
	C. 16m	F			
	D. 8m		\uparrow		
	E. 6m				
150) If the	e diagonal length of so	quare is given by $6\sqrt{2}$	cm. what is the side length	h of the square?	
	A. 12cm	B. 6cm	C. 3cm	D. 8cm	
151) If the radius of the circle is 10cm, then what is the length of it's diameter?					
	A. 5cm	B. 10cm	C. 20cm	D. $\sqrt{10}$ cm	
152) Whie	ch one of the followin	g statement is NOT T	True?		
	A. Any diameter is a	chord			
	B. Radius of a circle	is half of it's diameter	r		
	C. Any chord of a cir	ccle is diameter			
	D. All				

153) In the figure given below ABCD is a square with diagonal AC = $10\sqrt{2}$ cm long what is the side of the square?





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181) In the figure below OA & OB are radii of circle O which of the following is true?

A.	AB = OA	
B.	AB > OA	
C.	AB < OA	
D.	AB > OB	

182) One letter is chosen at random from the word INTRODUCTION what is the probability to choosing the letter D?

> B. 1/6 C. 1/4 D. 1/3 A. 1/12

183) What is the probability of choosing a vowel from the English alphabet?

A. 21/26 C. 1/12 B. 5/26 D. 5/13

184) A glass jar contains 5 red 3 blue and 3 green balls if a ball s chosen at random from the jar then which of the following is an impossible event?

- A. choosing a red ball C. choosing a yellow ball
- B. choosing a blue ball D. choosing a green ball

185) If a number is chosen at random from the lists of number 2, 3, 4, 7, 11, 13, 17, 19 then what is the probability that is prime?

> C. 7/8 A. 1 B. 0 D. 1⁄2

186) If a single 6 sided die is rolle	d. Then which of the	e following events is ne	either certain nor impossible?	
A. rolling a number less than 7		C. rolling a multiple	C. rolling a multiple of 2	
B. rolling an even m	umber	D. rolling a zero		
187) A pair of dice is rolled what	is the probability that	at the sum of the number	ers observed is 5?	
A. 1/9	B. 2/9	C. 8/9	D. 1	
188) One integer is chosen at rand	lom from 11, 12, 13	, 14, 15, 16, 17, 18, 19	what is the probability that	
it is a factor of 60?				
A. 1/3 B. 1	2/3 C	C. 2/9 D.	5/9	
189) Which of the following is tru	e about a probability	y scale?		
A. probability of unlikel	y between $\frac{1}{2}$ and 1	C. probability of lik	ely between 0 and $\frac{1}{2}$	
B. probability of even cl	hance is ¹ /2	D. probability of ce	rtain is $P(E) = 0$	
190) A pair of fair dice is tossed w	hat is the probabilit	y of not getting a sum	5 or 9?	
A. 2/9 B.	8/9	C. 7/9	D. 1/9	
191) Which one of the followin W and Z?	g Venn diagram is C	CORRECT about the re	lationship between N, Q,	
A. $N \subseteq W \subseteq Z \subseteq Q$ B. 1	N⊆W⊆Q⊆Z	C. W⊆N ⊆Z⊆Q	D. Q⊆W ⊆Z⊆N	
192) What is the value of $ -12 $	+ 13 - 14 - -4 ?			
A. 5 B.	7	C. 9	D. 19	
193) Which one of the followin	g numbers is writter	in descending order?		
A. 4.22,4.32,2.011,2.00)1	C. 4.32,4.22, 2.001,	2.011	
B. 4.32,4.22,2.011,2.0	01	D. 4.32, 2.011,4.22,	2.00	
194) What is the value of 3.61	- 4.73 ?			
A. 1.12	B. 2.11	C1.12	D2.11	
195) W/ro Abebech divides 21.	34 kg of sugar for he	er five neighbors, what	will be their share?	
A. 4.268 kg each	B. 2.648 kg each	C. 3.342 kg each	D. 3.243 kg each	
196) If Ato Abebe invested birr	10,000.00 with simple	ple interest rate of 20%	, how long will it	
take his money to be triple	ed?			
A. 30 years	B. 20 years	C. 10 years	D. 5 years	
197) Which one of the followin	g is the exact value	of $(0.0005)^2$?		
A. 0.0025	B. 0.000025	C. 0.00000025	D. 0.000000025	
198) Which one of the followin	g is NOT TRUE?	2		
A. $100 < (12.2)^2 < 2$	121	C. $121 < (11.5)^2 < 1$	44	
B. $9 < (4.5)^2 < 23$ (199) Which one of the followi	5 ng is NOT a perfect	D. $25 < (5.2)^2 < 36$ cube?		
A. 1,728	B. 1,331	C. 1,000	D. 728	

200) What is the length of the side of cube whose volume is 1000 cm^3 ?

A. 1000 cm B. 100 cm C. 10 cm D. 1 cm

201) If the side of a cube is doubled, by what times is the volume of the cube increases?

A. 4 B. 6 C. 7 D. 8

202) Which pair of coordinates and quadrants is paired INCORRECTLY?

- A. (1,2), quadrant I C. (0,0), quadrant II
- B. (-2,-4), quadrant III D. (4,-6), quadrant IV
- 203) Which one of the following is TRUE?

A. Every rational number is an integer

B. Every integer is a whole number

C. Every rational number is a natural number

D. Every natural number is a whole number

204) Abel's first semester result of his five subjects are given below

Amharic	English	Mathematics	General Science	Citizenship
82.6	73.9	91.3	78.12	83.6

Which one of the following is correct order of his mark in descending order?

A. Mathematics, Citizenship, Amharic, General science, English.

B. Amharic, General science, Citizenship, Mathematics, English.

C. Mathematics, English, General Science, Citizenship, Amharic.

D. Amharic, Mathematics, English, General science, Citizenship.

205) For any three rational numbers a, b and c, which one of the following is <u>TRUE</u>?

A.	(a + b) - c = a + (b + c)	C. a + b = b - c
B.	a + b = b + a	D. $(a + b) - C = (a + b) + c$

206) Lemlem's average mark in the class is 3.68% less than that of Kebede's average mark. If

Kebede's average mark is 83.1%, what is Lemlem's average mark?

A. 80.38% B. 86.78% C.79.42% D. 76.53%

207) Robel deposited 10,000 Birr in a Bank with simple interest rate of 10% per annum, when will his money be doubled?

A. in 10 years B. in 15 years C. in 20 years D. in 30 years 208) Which one of the following is TRUE? A. $100 < (9.2)^2 < 121$ B. $64 < (7.5)^2 < 81$ 209) If $(3.25)^2 = 10.5625$, then what is the value of 325^2 ? A. 105.625B. 1,056,250C. 105,625D. 105,625D. 1,056.25

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210) If the area of a square	is 81 cm^2 , then what	t is the length of its side	?
A. 81cm	B. 27cm	C. 18cm	D. 9cm
211) Which of the followin	g numbers is paired	with its square?	
A. 15 & 225	B. 9 & 36	C. 16 & 1	00 D. 4 & 64
212) Suppose $(2.13)^2 = 4$.	5369, what is the exa	act value of $\sqrt{453.69}$?	
A. 0.213	B. 2.13	C. 21.3	D. 213
213) Which of the followin	g numbers is a perfec	ct cube?	
A. 224	B. 1	C. 196	D. 100
214) If the length of side of	a cube is 10cm, ther	n what is the volume of	the cube?
A. 125cm ³	B. 100cm	³ C. 1,000c	cm ³ D. 10,000cm ³
215) Which of the followin	g numbers is paired	with its cube root?	
A. 20,736 & 12	B. 1,000	& 100 C. 3,375	& 15 D. 16 & 4
216) Which one of the follo	owing is TRUE ?		
A. The cube root of	f a negative number i	s negative.	
B. The cube root of	f a positive number is	s negative.	
C. The cube root of	f a negative number i	s positive.	
D. The cube root of	f zero is positive		
217) One gallon of ink can	paint an area of $6m^2$. How much gallon of i	ink is needed to
paint a box in the shap	be of a cube whose si	de is 4m?	
A. 160 gallon of in	k	C.	26 gallon of ink
B. 24 gallon of ink		D.	16 gallon of ink
218) Alemayehu has a garc	len in the shape of a	square. If he enlarges i	ts side by 3 meters, the
area of the new garder	n increased by $63m^2$.	What is the area of the	e first garden?
A. 81 m ²	B. 144 m ²	C. 63m ²	D. 225m ²
219) Which of the followin	g coordinates is foun	d in the second quadrar	nt?
A. (2,4)	B. (-2,4)	C. (2,-4)	D. (-2,-4)
220) Which one of the follo	owing line is a vertica	al line?	
A. $x = 5$	B. y = 3	C. $x + 2y = 12$	D. $x - y = 0$
221) Which one of the follo	owing point DO NO	$\underline{\Gamma}$ lie on the line $x + 2y$	= 10?
A. (2,4)	B. (0,5)	C. (1,10)	D. (10,0)

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222) Which one of the following line passes through the origin?						
A. $x + 2y = 4$	B. $x + y = 4$	C. $y = 6x$	D. $x + 2y = 1$			
223) If (0,b) lies on the line $x+2y = 4$, then what is the value of b?						
A. 6	B. 5	C. 4	D. 2			
224) Which pair of linear ine	equalities are equivaler	nt?				
A. $2x + 3 < 0 \& x$	< 3	C. $3x + 4 < 12 \& x + 4$	4 <12			
B. x+ 3 >12 & 2x	+ 3 > 9	D. $3x + 4 < 6 \& 6x < $	< 4			
225) What is the solution set	t of $2x + 5 < 2(2x + 3)$	+ 7 in the set of rational	numbers?			
A. x > -4	B. x < - 4	C. $x > 4$	D. x < 4			
226) Which of the following	inequality HAS NO s	olution in the set of natur	ral numbers?			
A. $2(x+4) < 2x +$	8 B. x > 4	C. $4(2+x) > 3x - 4$	D. 2x + 12 > 21			
227) Abebe has 450,000 Bir	r and planned to buy a	computer for his office.	The computer he			
planned to buy costs 20	,180 Birr each includin	ng tax and delivery. What	at is the maximum			
number of computers c	an he buy for his offic	e?				
A. 43	B. 34	C. 32	D.22			
228) Three years ago a fath	ner is 20 years older that	an his son, in 10 years' ti	me the father is			
twice older than his so	on. What is the age of t	he son now?				
A. 10 years	B. 12 years	C. 30 years	D. 36 years			
229) Alemayehu can paint	a whole house in 9 day	ys and Eprem can paint th	ne same house in 18			
days. In how many da	ys can they paint the h	ouse if they paint it toge	ther?			
A. 4.5 days	B. 5.4 days	C. 6 days	D. 2 days			
230) Which pair of coordin	ates determined a hori	zontal line?				
A. (0,0) & (4,4)	B. (0,6) & (0	,-7) C. (2,4) & (-3,4)	D. (2,1) & (1,2)			
231) What is the solution o	f 2x + 3(2x + 5) < -2x	x in the domain of N?				
A. { }	B. x/x>12	C. x/x < 12	D. x/ x < -1.5			
232) Which one of the follo	owing pair of inequalit	ies are equivalent?				
A. $2x + 4 < 0 \& x < 4$	-4	C. $3x - 2(x-3) <$	12 & x < 6			
B. $3(4x - 3) < 2 \& x$. < 1	D. $2x + 14 < 12$	2 & x < 1			
233) Abel is 20 years older	than Kelemwa, in 10	years' time Abel will be	double the			
age of Kelemwa. How	old is Kelemwa today	?				
A. 10 years	B. 15 years	C. 20 years	D. 25 years			

(2.54) which one of the	fallering is NOT and		
	following is NOT cori	rect?	
A. Every two ec	juilateral triangles are s	similar.	
B. Every two ci	rcles are similar.		
C. Every two so	juares are similar.		
D. Every two re	ctangles are similar.		
235) The sides of a tria	angle measures 12cm, 1	15cm and 16cm. If the	smallest side of a
similar triangle is	18 cm, what is the mea	sure of the longest side	?
A. 22.5cm	B. 24cm	C. 25.5cm	D. 26 cm
236) The area of two s	imilar triangles is 24cn	m^2 and 216 cm ² respect	ively. What is th
perimeter of the la	rger triangle if the peri-	meter of the smaller tria	angle is 20cm?
A. 60 cm	B. 40cm	C. 30cm	D. 20cm
237) What is the value	of x in the given trian	gle?	
		\frown	
		$(2x+40)^0$	
		(X+20) ⁰	\sim
A. 80 ⁰	в. 70 ⁰	C. 60 ⁰	D. 30 ⁰
	isosceles triangle whe		
238) Suppose ABC is an	isosecies triangle with	re AB=BC, $m(\langle ACB \rangle)$ =	42° and ABX i
238)Suppose ABC is an straight line, then v	what is the value of M(re AB=BC, m(<acb)= <cbx)?< th=""><th>42° and ABX i</th></cbx)?<></acb)= 	42° and ABX i
238)Suppose ABC is an straight line, then v	what is the value of $M($	re AB=BC, m(<acb)= < CBX)? X</acb)= 	42° and ABX i
238) Suppose ABC is an straight line, then v A. 84 ⁰	what is the value of M(C B. 42 ⁰	re AB=BC, m(<acb)= < CBX)? X </acb)= 	2 ^{42°} and ABX i D. 180 ⁰
238) Suppose ABC is an straight line, then v A. 84 ⁰ A. 84 ⁰ A. 84 ⁰	what is the value of M($B = B$, 42^0 B three interior angles of	re AB=BC, m(<acb)= < CBX)? X C. 96⁰ of a triangle are in the r</acb)= 	D. 180 ⁰ D. 180 ⁰
238) Suppose ABC is an straight line, then v A. 84 ⁰ A. 84 ⁰ The measure of the small	what is the value of M($B = B$, 42^0) b three interior angles callest angles.	re AB=BC, m(<acb)= < CBX)? X C. 96⁰ of a triangle are in the r</acb)= 	D. 180 ⁰ D. 180 ⁰ D. 1812:13. W

240) The exterior angle of a triangle is 130° . What is the value of y if the interior remote angles are $(2x+50)^{\circ}$ and 40°

the

A. 20° B. 40° C. 60° D. 25°

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D a secant of the circle

241) In the figure blow ΔDEF is a right triangle, m(ΔDEF)=90⁰, \overline{GD} is altitude to the hypogenous \overline{EF} of ΔDEF . Then what is the value of Y?



242) In the circle below, if arc AB= 80° and arc CD= 120° , then what is m(<y)?



243) If a line intersect a circle at exactly one point, then the line is ;

- A. Center of the circle C. A tangent of the circle
- B. Point of tangency
- 244) In the figure blow, ABC is a triangle with an extension of D on BC. IF m(<ABC)=50⁰, then what is the degree measure of M(<ACD)?



245) In the figure below \overline{PQ} is a chord and 0 is the center of the circle. If m(<PBQ)=68⁰, then what is the size of m(<OPQ)?



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246) Which one of the following is not the concerning the circle with center at O, as shown in				
the figure below?			D	
A. The shaded reg	gion is a segment of t	the circle.		
B. \overline{OC} is a radius	of the circle.		o (
C. $\triangle COD$ is a sec	tor of the circle.	\backslash		
D. \overline{CD} is a chord	of the circle		C	
247) What is the simple interest	t on birr 75 at a rate of	of 6% per year for 8	3 years	
A. 36 birr	B. 111 birr	C. 360 birr	D. 435 birr	
248) In a class where the numb	er of girls is 64% of	the total number, th	ere are 18 boys. How	
many students are there in	the class?			
A. 40	B. 50	C. 30	D. 60	
249) The decimal form of 472.3	367% is	·		
A. 47236.7	B. 4.72367	C. 4117	D. 4412	
250) Which one of the following	g lines does NOT co	ntain a chord of cir	cle?	
A. A tangent line	B. A scant line	C. a diameter	D. B and C	
251) A ball is drawn at random	from a box containing	ng 5 white, 6 blue a	nd 4 red balls. What is	
the probability that a ball	drawn is NOT red?			
A. $\frac{4}{15}$	B. $\frac{11}{15}$	C. $\frac{2}{3}$	$D.\frac{1}{5}$	
252) In an experiment, two coin	ns, a 5 cent piece and	a 10 cent piece are	e tossed. What is the	
probability that the same f	faces appear?			
A. $\frac{1}{2}$	B. $\frac{1}{4}$	C. $\frac{3}{4}$	D. 1	
253) Which of the following p	robability can best de	escribes certain eve	nt?	
A. 0	B. 0 <p(e) <1<="" td=""><td>C. 1</td><td>D. $o < p(E) < \frac{1}{2}$</td></p(e)>	C. 1	D. $o < p(E) < \frac{1}{2}$	
254) A pair of fair dice is throw	on what is the probab	oility that the sum o	f the scores on the upper face	
is 6?				
A. $\frac{1}{6}$	B. $\frac{1}{2}$	$C.\frac{1}{5}$	D. $\frac{5}{36}$	
255) If three coins are thrown a	at a time, what is the	probability of obtai	ning two tail and one head?	
A. $\frac{3}{8}$	B. $\frac{5}{8}$	C. $\frac{1}{2}$	D. $\frac{7}{8}$	

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256) If \in is an event of the possibility set of an experiment, then which is true about the						
probability of the event?						
A. If \in is any event,	A. If \in is any event, then $0 \le p(\in) \le 1$					
B. If \in is certain even	B. If \in is certain event, then $p(\in) = 1$					
C. If \in is event chance	C. If \in is event chance, then $p(\in) = \frac{1}{2}$					
D. All are true						
257) What is the length of the a	altitude of an equilater	al triangle whose side	is 8cm long?			
A. $4\sqrt{3}$ cm	B. 6cm	C. 8√3 cm	D. 8cm			
258) Which triple numbers can	be the sides of a right	t angle triangle?				
A. 8, 8,10	B. 15,20,30	C. 18,24,30	D. 21,24,35			
259) The longest chord on the circle is called						
A. Radius	B. diameter	C. Secant	D. tangent			

260) Which one of the following is NOT TRUE?

- A. The measure of an inscribed angle is half the measure of the arc which subtended it
- B. The perpendicular bisector of a chord passes through the center of the circle
- C. An inscribed angle subtended by a semi-circle is a right angle
- D. An angle subtended by a minor arc is an obtuse angle.
- 261) In the figure below O is the center of the circle and AB is perpendicular to OC, if

 $m(\langle ABC \rangle = 32^0$, then what is m(OAB)?



264) If the radius and the height of a circular cylinder is 8cm, and 12cm respectively, then							
what is the lateral surface area?							
I	A. 72π cm ²	B. 84π cm ²	C. 192π cm ²	D. $144\pi \text{cm}^2$			
265) The	265) The box is in the form of a rectangular prism whose side is 4m, 5m and 11m.						
Wh	What is the volume of the box?						
	A. 20m ³	B. 220m ³	C. 99m ³	D. 109m ³			
266) Wh	at is the volume of a	a cylinder if its radius o	of the base is 3cm an	d the height is 14 cm?			
(u	$1 = \frac{22}{7}$						
	A. 412cm ³	B. 396cm ³	C.1 42cm ³	D. 72cm ³			
267) Ab	bebe needs to paint	the walls of his room w	vhose floor is 6m by	4m and height			
2.	5m. His room has 2	2 windows $1m^2$ each a	and a door 1.5m by	2m. How much			
ga	allon of ink he need	if one gallon can paint	$3m^2?$				
	A. 15 gallon	B. 32 gallon	C. 48 gallon	D. 50 gallon			
268) Th	e probability of an e	event denoted by P(E) r	necessarily lies betwo	een			
	A. 1 and 2	B. 0 and 1	C1 and 1	D2 and 1			
269) In a	a hospital 6% of the	operation failed per year	ar, If 1200 patients v	vere operated in a			
yea	r how many of them	a survived?					
	A. 72	B. 120	C. 1120	D. 1128			
270) Wł	nat is the length of th	ne altitude of an equilat	eral triangle whose s	ide is 8cm long?			
	A. $4\sqrt{3}$ cm	B. 6cm	C. $8\sqrt{3}$ cm	D. 8cm			
271) Wł	nich one of the follo	wing is NOT TRUE?	_				
	A. The measure of	an inscribed angle is h	alf the measure of th	e arc which subtended it.			
	B. The perpendicul	ar bisector of a chord p	basses through the ce	nter of the circle.			
	C. An inscribed an	gle subtended by a sem	i-circle is a right ang	gle.			
	D. An angle subter	nded by a minor arc is a	n obtuse angle.				
272) The	e simplified form of	$4\sqrt{18} - 2\sqrt{50} + 3\sqrt{72}$					
	A. 20	B. $12\sqrt{2}$	C. $20\sqrt{2}$	D. 10√2			
273) If v	$\sqrt{10+m} = 4$, then	what is the value of	<i>m</i> ?				
	A. 6	B. 16	C. 4	D. 8			

274) Which of the	following is the cube root o	$f \frac{-27}{64}$	
A. $\frac{-3}{8}$	B. $\frac{3}{8}$	C. $\frac{-3}{4}$	D. $\frac{3}{4}$
275) The value $\sqrt[3]{\frac{5}{1}}$	4 6		
A. $\frac{7}{4}$	B. $\frac{27}{8}$	C. $\frac{3}{2}$	D. $\frac{3}{4}$
276) What is the cu	ube root of the number 0.34	3	
A. $\frac{7}{10}$	B. 0.7	C. 0.07	D. A and B
277) The simplified	d form of the expression $$	$\frac{2}{7} \ge \sqrt{63} \ge \sqrt{\frac{1}{8}}$	
A. $\frac{2}{3}$	B. $\frac{3}{2}$	C. $\frac{9}{2}$	D. $\frac{3}{4}$
278) If $ab=5$ and a^{2}	$^{2}+b^{2}=12$ then $(a+b)^{2}=$		
A. 20	B. 22	C. 30	D. 17
279) The square ro	ot of 3249 is		
A. 57	B 53	C. 54	D. 56
280) The simplified	d form of $3\sqrt[3]{24} + 2\sqrt[3]{3} = $ _		
A. $2\sqrt[3]{3}$	B. $6\sqrt[3]{3}$	C. $4\sqrt[3]{3}$	D. $5\sqrt[3]{3}$
281) If $(9.4)^2$ is 88.	36, then the square root of	8836 is	
A. 0.94	B . 940	C. 94	D. 9.4
282) The approxim	hate value of y^2 for $y = 11.4$	is	
A. 11	B. 121	C. 144	D. 120
283) What is the di	fference between -5 and 15	on the number liner?	
A. 10 unit	t B. 20 units	C. 15 units	D. 5 units
284) Which one of	the following sets represen	ts the set of Z.?	
A. <i>Z⁻UV</i>	$W B. Z^- UZ^+$	C. <i>NUZ</i> ⁻	D. A and C
285) The solution s	set for $/2x-4/=6$ is		
A.{5}	B. {-1}	C. {-1,5}	D. {-5,1}
286) If x =-4 and y	=2, then what is $\frac{3 x+5 + 4y }{2 x - y }$		
A. 11	B. 6	C. $\frac{6}{11}$	D. $\frac{11}{6}$
287) The simplified	d from of $\frac{4}{5} + \frac{3}{5}\left(\frac{1}{3} + \frac{2}{5}\right) =$		
A. $\frac{31}{25}$	B. $\frac{15}{32}$	C. $\frac{3}{5}$	D. $\frac{11}{15}$

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288) How long will take birr 1500 to get birr 300 simple interest at rate of 10%?					
A.5 years	B. 2 years	C. 3 years	D. 4 years		
289) If $(4.12)^2 = 16.97$, then what is $(41.2)^2$?					
A.1697	B. 169.7	C. 0.1697	D. 16.97		
290) What is the solution se	et of the equation? $\frac{2x-3}{2}$	$\frac{3}{4} + \frac{x-6}{4} = \frac{9}{8}?$			
A. 10	B. 33	C. $\frac{33}{10}$	D. $\frac{10}{33}$		
291) What is the smallest of	f four consecutive inte	gers whose sum is 138?			
A.33	B. 34	C. 32	D. 36		
292) If $x = -\frac{2}{3}$ and $y = \frac{-2}{5}$,	then what is the value	$= \text{ of } \frac{3x - 10y}{6x + 15y}?$			
A. $\frac{1}{5}$	B. $-\frac{1}{5}$	C. $\frac{3}{5}$	D. $\frac{-3}{5}$		
293) Which of the following	g is the solution set of	$\frac{2}{3}x + \frac{5}{3} = \frac{5}{3} + x$			
A. {0}	B. {−1}	C. {1}	D. {2}		
294) What is the simple int	erest on birr 75 at a ra	te of 6% per year for 8 yea	ars		
A) 36 birr	B) 111 birr	C) 360 birr	D) 435 birr		
295) What principal will ea	rn birr 9, 000 simple in	nterest in 3 years. At a rate	e of 10%		
A) 3000	B) 2000	C) 30, 000	D) 20,000		
296) A man bought a sheep	for birr 750 and sold i	ts for birr 900 what is his	profit		
A) 10%	B) 20%	C) 30%	D) 40%		
297) The price of a machin	e is birr 1300 plus 15%	% VAT (value added tax)	How much is the VAT		
A) 159	B) 180	C) 195	D) 200		
298) In a school there are 4 represents boys to girls	500 students. Where 3	3000 are boys which of the	e following ratio		
A)2:3	B) 2:1	C) 1: 3	D) 1:2		
299) If the volume of a certain liquid decreases from 300ml to 240ml what is the percent change of the volume					
A)20%	B) 15%	C) 12%	D) 10%		
300) The measure of the an	gle of a triangles are ir	the ratio 2:3:4 find each	angle.		
A) 40° , 60° , 80°	$)^0$	C) 90^0 , 0^0 , 90^0			
B) 60^0 , 50^0 , 7	00	D) 35^0 , 65^0 , 90^0			
301) String of length 160cm	n is cut in to 2 pieces in	n the ratio 3:5 find length	to each piece.		
A)40cm & 120cm	1	C) 60cm & 100cm			
B) 70cm & 90cm		D) 50cm & 110cm			

302) If the po A. 3	pint (t,5) lies or	n the line y =-2x-1 B2	, then what is the va C. 2	lue of t? D3
303) Which o	ne of the follow	wing equation of a	a straight lines that p	asses through the origin.
A.2	x-5=6	B. 4y-2=6	C. 2x-3y=6	D. 6x-2y=0
304) If x<0 at	nd y=0 then the	point lies on		
A.2	nd quadrant	B. $x = axis$	C. 3 rd quadrant	D. y-axis
305) Y=4x pa	usses through th	ne and _	quadra	ints
A.I	I and IV	B. I and III	C. I and IV	D. II and III
306) The solu	tion set of -5	$x-2 \ge 8$, in the set	of W is	
A.{	2,3,4}	B. {0,1,2, }	C. Ø	D. {0,1,2}
307) The side	s of a pentagor	measures 10cm,	12cm,8cm,6cm and	4cm. The longest side of a
similar p	entagon measu	res 6cm. what is	the measure of the sl	nortest side of a similar
polygon				
A.2	cm	B. 5cm	C. 4cm	D. 3cm
308) The con	stant proportion	nality of two cong	ruent polygons is	
A.2	,	B. 1	C. $\frac{1}{2}$	D. 3
309) Which o	ne of the follow	wing pairs of figur	res are always simila	r.
A. <i>A</i>	Any two squares	8	C. Any two equilat	eral triangles
B. A	Any two circles		D. All	
310) Which o	ne of the follow	wing false about ra	ational number?	
А.	There are many	rational number	between any two rat	ional number
В.	The absolute va	alue of a negative	rational number is it	self
C.	On the number	line the rational	number located to	the left is smaller than the
	one to the right			
D. 1	For two negativ	ve rational numbe	rs the one with great	er absolute value is smaller
311) Which o	ne of the follow	wing defines the s	et of positive rationa	l number (Q ⁺)?
А.	$\left\{ a \middle _b : a, b \in C \right\}$	N }	C_{a} $\left(\frac{a}{b} : a, b\right)$	Z
В.	$\left\{ {^{a}}\!/_{b}:a,b\in\right.$	w}	D. $\left\{ \frac{a}{b} : a, b \right\}$	∈ Z }
312) When th	e expression 2	$\frac{2}{3} + \frac{4}{4} \frac{1}{4} - 5$	$\frac{1}{6} + \frac{2}{3}$ is simpl	ified the result is

A. $-3\frac{1}{3}$ B. $1\frac{1}{4}$ C. $2\frac{1}{6}$ D. $2\frac{5}{12}$

313) Which of the following question is equivalent to the equation $\frac{1}{x} - 1 = 2 - \frac{3}{x}$ $X \neq 0$

A.
$$X - 1 = \frac{1}{2} - \frac{x}{3}$$

B. $2X - 3 = 1 - X$
C. $X = -2$
D. $X - 1 = 2 - 3 x$

314) Which of the following number is equal to 1.25 $(3 \div 12.5 + 1 \div 12.5)$?

A. 4 B.
$$\frac{1}{25}$$
 C. $\frac{5}{4}$ D. 45

315) Which of the following lists of number is written in an increasing order?

A.
$$1/5$$
, $2/3$, $3/2$, $1^3/4$ C. $1/5$, $2/3$, $1^3/4^3/2$ B. $2/3$, $1/5$, $3/2$, $1^3/4$ D. $1/5$, $1^3/4$, $2/3$, $3/2$

316) What is the solution the equation 4 |X+1| = 12?

A.
$$\{2, -4\}$$
B. $\{-2, 4\}$ C. $\{-2, -4\}$ D. $\{2, 4\}$

317) Which of the following number is equal to $\frac{9}{4} - (3 \frac{1}{3} - 1 \frac{1}{4})?$

A.
$$^{-1}/_{3}$$
 B. $^{-11}/_{6}$ C. $^{1}/_{6}$ D. $^{13}/_{6}$

318) Which of the following statements is true?

A.
$$|^{-2}/_{3}| < {}^{3}/_{2}$$
C. $|{}^{3}/_{4}| > |^{-4}/_{5}|$ B. $|{}^{3}/_{4}| + |{}^{1}/_{4}| = 0$ D. ${}^{5}/_{6} = -|^{-5}/_{6}|$

319) What is the value of 1/2 y + 2 x - 3 x y when X= - 2 & y = 3

A.
$$-41/_2$$
 B. $31/_2$ C. 10 D. 23

320) Which of the following is true?

A.
$$\sqrt{0.09} < 0.09$$
C. $\sqrt{0.900} = 0.30$ B. $0.36 < (0.62)^2 < 0.49$ D. $2\sqrt{10} > 3\sqrt{5}$

321) When $\frac{\sqrt{27}}{\sqrt{108}}$ is simplified the result is equal to:

A.
$$\frac{1}{4}$$
 B. $\frac{1}{2}$ C. $\frac{1}{3}$ D. $\frac{2}{3}$

322) The simplified form of
$$\sqrt{\frac{2}{5}} \cdot \sqrt{\frac{125}{8}}$$
 is
A. 1.5 B. 2.5 C. 0.4 D. 5

323) If a = 2.4 and b = 3.2 what is the value of $\sqrt{a^2 + b^2}$? A. 2 B. 16 C. 8 D. 4

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324) If $(8.5)^2 = 72.25$, then what is the square root of number 0.7225?				
	A. 85	B. 0.085	C. 0.0085	D. 0.85
325) ³ √210	$\overline{6} - \sqrt[3]{64}$ is equal to			
	A. 6	B. 4	C. 2	D. 3
326) Whic	ch of the following is no	t a perfect cube?		
	A. 64	B. 27	C. 216	D. 81
327) What	t is the simplest form of	$\sqrt[3]{15 \frac{5}{8}}?$		
	A. $2^{1}/_{2}$	B. ² / ₅	C. ⁵ / ₈	D. $^{8}/_{5}$
328) If $\sqrt[3]{2}$	$\frac{3}{29.22} = 3.08$ then $\sqrt[3]{292}$	20 is equal to		
	A. 3.08	B. 30.8	C. 308	D. 0.308
329) The s	solution of $\sqrt{X+4} = 3$ i	S		
	A.4	B. 9	C. 5	D. Ø
330) √20	$X \sqrt{10} X \sqrt{2}$ is equal to	,		
	A. 20	B . 10	C. 2	D. 400
331) The s	simplified form of $3x + 3$	$5y -\frac{1}{2} (5x - 4y) -$	$\frac{3}{2}(x-4y)$ is	
	A. 13y – X	B. 9y – 5X	C. 7y – X	D. 18y – 4X
332) In the	e equation 5xyn – 6 w z	$= \frac{1}{2}$ (6xyn - 4wz) v	when n is written inter	ims of x, y, w and z it
will b	De			
	A. $n = \frac{\omega^2}{xy}$	B. n = $\frac{2\omega^2}{Xy}$	C. n = $\frac{-4\omega^2}{Xy}$	D. n = $\frac{5\omega^2}{Xy}$
333) The v	value of the expression	$\frac{x^3 - y^3 + 1}{2y + x - 2}$, if $x = 2$ and	y = 3 is equal to	
	A3	B. 3	C. 0	D. 1⁄2
334) Whic	ch of the following linea	r equation has solution	n in the given domain	?
	A. $5x - 3 = 4$, $X \in 2$		C. 10 x = 3 (5X-2), $\frac{1}{2}$	$X \in Q^+$
	B. $\frac{3}{2} x^{-3}/_5 = 4$, X	€Q	D. $\frac{5}{3}x = X + 10$,	$X \in W$
335) The s	solution set of the equat	$\sin \frac{3X+2}{5} - \frac{2X-5}{3} = 2$	is	
	A. 1	B1	C. ¹ / ₂	D. $^{3}/_{2}$
336) What	t is the solution set of th	e inequality 20 (4X -6	$(5) \le 80$ in the set of point point $(5) \le 80$ in the set of	ositive integers
	A. {1, 2 3 4 }		C. {0, 1, 2, 3, 4}	
	B. {1, 2}		D. ø	

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337)	When one third of the	ne sum of three consecutiv	ve numbers is decreased by	y 5 the result is	
	21, the largest of three integers is				
	A. 27	B. 29	C. 25	D. 28	
338)	The sum of two num	bers is 42. Twice the first	t is equal to 32 times the se	econd, what is	
	the larger of the two	number?			
	A. 26	B. 25.8	C. 25.2	D. 27	
339)	The sum of two con	secutive integers is three t	times their difference. Wh	at is the larger number?	
	A. 4	B. 3	C. 2	D. 5	
340)	A grocer buy X kg o	of potatoes at 1.5 birr per k	kg and y kg of onions at 2.	25 birr per kg.	
	How much money d	loes he pay in birr?			
	A. $\frac{3X+6y}{2}$	B. $\frac{6X+9y}{2}$	C. $\frac{5X+74}{4}$	D. $\frac{6X+9y}{4}$	
341)	A shop keeper buys	20kg of sugar at p birr per	r kg. He sells 16kg at (P+	1⁄2) birr per kg	
	and the rest at (P+1)	birr per kg. What is his p	rofit?		
	A. 16Birr	B. 20 Birr	C. 12 Birr	D. 24 Birr	
342)	If P is the smallest of	of four consecutive even in	ntegers what is their sum i	n terms of P?	
	A. 8P + 12	B. 6P+12	C. 4P + 12	D. 4P + 10	
343)	Which one of the for	llowing defines the set of	negative rational numbers	(<i>Q</i> ⁻)?	
	A. $\left\{\frac{a}{b}: a, b \in N\right\}$		C. $\left\{\frac{a}{b}: a \in N \& b \in z^{-}\right\}$	•}	
	B. $\left\{\frac{a}{b}: a, b \in W\right\}$	}	D. $\left\{\frac{a}{b}: a, b \in z^{-}\right\}$		
344)	What is the solution	set of the equation $ x - 4 $	-2 = 1?		
	A. {1,7}	B. {-1,7 }	C. Ø	D. { 1, -7 }	
345)	Which one of the fo	llowing statement is NOT	<u>true?</u>		
	A. $\frac{7}{2} = \left -\frac{7}{2} \right $	B. $2\frac{3}{5} > \frac{13}{5}$	C. $\frac{2}{3} < \frac{3}{4}$	D. $\left \frac{-5}{2}\right > \frac{7}{3}$	
346)	Subtracting 6 from original number?	a number and multiplyin	ng the result by 4 gives 2	28. What was the	
	A. 14	B. 18	C. 9	D. 13	
347)	In a given class the	ere are 60 students. If the	e ratio of boys to girls is	2:3, what is the	
	number of girls in th	ne class?	G 22	D 0 0	
	A. 24	В. 36	C. 32	D. 28	

348) The sum of age of a father and his son is 96. Three years ago the father's age was twice				
as old as his son. How old is the father now?				
A. 66 years	B. 33 years	C. 63 years	D. 36 years	
349) What is the solution	set of the inequality $\frac{3}{2}$	$\frac{x+2}{3} > X - 4?$		
A. $\{x: x > -14\}$	B. $\{x: x > 0\}$	C. {x: $x < -14$ }	D. $\{x: x \in Q\}$	
350) The price of Toyota	car is 4,000,000 birr	plus 20% VAT. What wa	s the total price of a	
car including vat?				
A. 3,200,000 birr	B. 4,800,000 birr	C. 4,400,000 birr	D. 3,600,000 birr	
351) Shemsu deposited Bi	irr 30,000 in Dashen	Bank at 4% rate of simple	interest for 6 month.	
What is his interest?				
A. 60 birr	B. 660 birr	C. 600 birr	D. 500 birr	
352) The volume of right	triangular prism with	height 12cm is 72cm ³ . Wh	at is the base area of	
the prism?				
A. 6cm^2	B. 12cm ²	C. 18cm^2	D. 24 cm ²	
353) In the figure below, A	B=8cm, CE=5cm an	nd CD= 12cm, what is the	area of the shaded region?	
A. 48cm^2		C ∧		
B. 28cm ²				
C. 14 cm^2	l,			
D. 20 cm^2	A	D B		
354) Which one of the following the followin	owing number is bot	h perfect square and prefe	ct cube in the set of	
whole number?				
A. 81	B. 729	C. 216	D. 625	
355) The simplified form of	f $3\sqrt{12} - 3\sqrt{3} + \sqrt{75}$	5 is:		
A. $-2\sqrt{3}$	B. 8√3	C. 5√3	D. 9√3	
356) If $\sqrt{3 - X} = 3$, then we	nat is the value of X?			
A. 9	B. – 6	C. 6	D. 0	
357) The perimeter of a foo	tball ground is 400m	s. If the width is 20m less	than the length, then	
what is the width of th	e field?			
A. 90m	B. 110m	C. 130m	D. 70m	
358) If x = -2 and y = $\frac{-1}{5}$, t	he what is the value of	of $\frac{2x-5y}{10y-1}$?		
A. 1	B1	C. 1/3	D1/3	

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359) What is the solution set of the equation $\frac{3x+7}{2} - \frac{x+9}{3} = \frac{2}{5}$					
A. {35}	B. {-35}	$C.\left\{\frac{-1}{35}\right\}$	D. $\left\{\frac{1}{35}\right\}$		
360) If the x – intercept and y of the line?	– intercept of a line are –	4 and 12 respectively,	what is the slope		
A. 1/3	B. – 3	C. 3	D. $\frac{-1}{3}$		
361) What is the smallest of the	aree consecutive odd intege	ers whose sum is 69?			
A. 21	B. 23	C. 25	D. 19		
362) The slope of the line pass	sing through the point P(0,	2) and Q(a,5) is – 1, w	what is the value of a?		
A. 3	B. 5	C. – 3	D. $.\frac{1}{5}$		
363) In the figure below \overline{DE} /	\overline{BC} . If AD = 5cm, BC =	6cm and EC = 6 \overline{AE} ,	= 4cm, then what		
is the length of \overline{DB}					
A. 8cm		A			
B. 9cm					
C. 12.5cm	D	E			
D. 7.5cm	B	→ □ c			
364) The ratio of correspondi-	ng sides of two similar tri	angles is 2:5, what is	the ratio of their		
perimeter?	perimeter?				
A. 7:9		C. 4:25			
B. 2:5		D. 8: 100			
365) In the figure below \overline{LM}	$\bot \overline{Mp}, \overline{PQ} \bot \overline{Mp}$ and L,N,	Q are on the same line	e if Δ LMN similar to		

 ΔQPN and LM = 6, PQ=4cm if the area of Δ LMN 45cm², then what is the area of Δ QPN?



366) Which of the following liens may **NOT** have the possibility to passes through the interior point of the circle?

A.	A diameter	C. A tangent
B.	A chord	C. A secant

A. 3⁄4

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367) In the figure below, O is the center of the circle and $\widehat{BD} = 3 \widehat{AC}$ what is the measure of < BAD?



368) In the figure given below, O is the center of the circle and M< (BOC) = 135° what is the measure of \widehat{AC} ?



369) If the event E of an experiment is likely, then what is the value of probability of an event?

A. $0 \le P(E) \le 1$	B. P(E) = 1	C. $\frac{1}{2} < P(E) < 1$	D. O < P(E) < $\frac{1}{2}$
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370) If three coins are thrown a time. What is the probability of obtaining two heads and one tail or two tails and one head?

371) In $\triangle ABC$, AB = 8cm, BC = 12cm, which one of the following can **NOT** be the length of side \overline{AC} ?

C. 7/8

D. 5/8

A. 6cmB. 18 cmC. 22 cmD. 13 cm372) The length of the legs of right angled triangle are 12 cm and 16 cm, what is the length of the hypotenuse?

A. 24cm B. 25cm C. 15cm D. 20cm

373) A ladder of length 12m leans against a wall so that the angle between the ladder and the

wall is 60° , How far is the base of the ladder from the wall?

B. 1⁄4

A. $12\sqrt{3}$ cm B. $6\sqrt{3}$ cm C. $24\sqrt{3}$ cm D. $12\sqrt{2}$ cm

374) In the figure below, DEF is a triangle with an extension of G on EF. If $m(\langle DEF \rangle = 60^{\circ})$, then what is the degree measure of y? D



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375)	The lateral surface area of a right circular cylinder is $144\pi m^2$ and the radius of the base is			
	4cm. what is the altitude of	the cylinder?		
	A. 16m	B. 18 m	C. 9m	D. 10m
376)	What is the area of a circle	whose circumference	is 24πmm?	
	A. $12 \pi m m^2$	B. 50 $\pi m \mathrm{m}^2$	C. 144 $\pi m m^2$	D. 72 $\pi m m^2$
377)	Which one of the following	g plane figure can the c	liagonals bisect each o	ther at right angles?
	A. Rectangle	B. Square	C. Rhombus	D. B and C
378)	The base of right triangula	r prism is right angled	d triangle. If the heigh	t of the prism is 6m
	and the longest and the sh	nortest sides are 10m	and 6m, then what is	s the volume of this
	prism?			
	A. 36m ²	B. 144m ²	C. 90m ²	D. 120m ²

379) In a right circular cylinder given below, the base radius r of the cylinder is equal to is altitude h. which one of the following is true interms of r.



380) The area of a trapezium given below is 42 cm^2 . If the bases of the trapezium are $b_1 = 6 \text{ cm}$ and $b_2 = 8 \text{ cm}$ long, then what is height of the trapezium?



381) AB is a quarter circle with center O and radius 14cm long given below in the figure. What

is the perimeter of the shaded region? (Take $\pi \frac{22}{7}$)



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382) In the figure given below, if PS= 16cm, SQ = 9cm and $\Delta PRQ \sim \Delta PSR$, what is the length of \overline{PR} ?



383) Two triangles are similar. The length of a side of one triangle is 5 times that of the length of the corresponding side of the other. What is the ratio of the area of the smaller to the area of the larger triangle?

A. 5:1 B. 10:1 C. 25:1 D. 1:5

384) Given two triangle $\triangle ABC$ and $\triangle DEF$ such that $\frac{AB}{DE} = \frac{BC}{EF} = \frac{AC}{DF}$ then which of the following similarity theorems process that $\triangle ABC \sim \triangle DEF$?

- A. SSS similarity theorem C. SAS similarity theorem
- B. AA similarity thermoD. None of the above

385) Which family of plane figures below are always similar?

- A. squares
- B. equilateral triangles

386) In the figure below, if \overline{AD} and \overline{BE} are altitude of ΔABC , which of the following similarity theorems supports that $\Delta ADC \sim \Delta BEC$ B

- A. SAS similarity theorem
- B. AA similarity theorem

C. SSS similarity theorem

D. none of the above



C. circles

D. All

387) The ratio of the area of the two similar triangles is 4:25. What is ratio of their corresponding perimeters (sides)?

A. 16:25 B. 2:5	C. 1:5	D. 5:2
-----------------	--------	--------





A. {-4,-2} B. {-4,2} C. {2,4} D. {4,-4}

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408)	The sum $\sqrt{12} + 2\sqrt{3} + \sqrt{3}$	$\sqrt{147}$ is equal to:		
	A. 12√3	B. $13\sqrt{2}$	C. 11√3	D. 14√3
409)	If $\sqrt{7} = 2.65$, then what	is the square root of 0).0007?	
	A. 26.5	B. 0.265	C. 2.65	D. 0.0265
410)	A woman is 45 years of	ld. 12 years ago, she	was three times as of	d as her son. How old is
	the son now?			
	A. 23	B. 20	C. 25	D. 21
411)	What is the solution set	of the equation $\left(\frac{3(x-5)}{7}\right)$	$\left(\frac{5}{2}\right) - x = \frac{5}{7}?$	
	A. {-7}	B. {7}	C. {-5}	D. {5}
112)	Which one of the follow	ing is true about the s	riven granha?	

412) Which one of the following is true about the given graphs?



- A. Graph a and b have positive slope
- B. Only graph b passes through the origin
- C. The slope of c, d and e have negative, undefined and zero respectively.
- D. All

413) In the cartestan coordinate plane, which one of the following is true.

A. If x < 0 and Y > 0 then the point lies 4^{th} quadrant

B. If x < 0 and Y < 0 then the point lies 3^{rd} quadrant

C. If x > 0 and Y > 0 then the point lies 2^{nd} quadrant

D. If x > 0 and Y < 0 then the point lies 1^{st} quadrant

414) In the figure given below, if PS = 9m, SQ = 16m and $\Delta PRQ \sim \Delta PSR$, what is the length of \overline{RP} ?



415) The ratio of the sides of two similar triangles is 4:9. What is the ratio of their corresponding areas?A. 2:3B. 16:81C. 3:2D. 1:4

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416) Two triangles are similar. The length of a side of one triangle is 6 times that of the corresponding side of the other. What is the ratio of the area of the smaller to the area of the larger triangle?A. 36:1 B. 1:36 C. 1:9 D. 9:1

417) Which one of the following quadrilateral can always be inscribed in a circle?

A. Rectangle B. Square C. A and B D. parallelogram

418) In the figure below O is the center of the circle. If m (\widehat{AXB}) = 80⁰, what is the measure of (\widehat{ABC})? A. 180⁰ C

- **B**. 100⁰
- C. 140°
- D. 70⁰

419) Two dice are tossed. What is the probability of each event whose sum is 13?

A. $\frac{2}{9}$ B. 1 C. 0 D. $\frac{1}{2}$

Δ

420) A box contains 5 white 3 red and 2 blue balls all identical except for colour. If a ball is drawn from the box at random, what is the probability that the ball is a blue or a red ball?

A. 0.3 B. 0.2 C. 0.4 D. 0.5

421) If E is an event of an experiment and P(E) is between O and $\frac{1}{2}$, then the occurrence of the event according to probability scale is:

A. Impossible B. Certain C. Likely D. Unlikely

422) If three coins are thrown at a time. What is the probability of obtaining the same face on the upper?

A. $\frac{1}{2}$ B. $\frac{1}{4}$ C. $\frac{1}{6}$ D. $\frac{1}{8}$

423) Which one of the following is NOT true about probability?

A. A subset of the possibility set of an experiment is called event

B. The set of all possible outcomes of an experiment is called a sample space

C. If the probability of an event is one, then it is called certain event.

D. All probabilities must have a valve greater than or equal to O and less than 1.

424) In ΔDEF , DE = 10m and EF = 13m. Which one of the following can NOT be the length of side DF?

425) Which one of the following sides can form a right angled triangle?				
em	C. 9cr	n, 4cm, 25cm		
cm	D. 6cr	n, 8cm,12cm		
ΔABC is a right ang	gled triangle with \overline{CD}	$\perp AB$, if $\overline{AD} = 9$ cm and DB =		
ne of the following is	s true?			
$\overline{AC} = 14cm$		С Ф		
CD = 14 cm	/			
CB = 18 cm				
$ABC = 150 \text{cm}^2$	A	D B		
lder than his daughte	er. 5 years ago she was	six times as old as his		
s the daughter now?				
B. 12 years	C. 8 years	D. 10 years		
t of five consecutive	integers whose sum is	235?		
B. 46	C. 45	D. 47		
hen what is the value	of $3y(2xy)+5(4x-2y)$)?		
B. 45	C 42	D 37		
er between 2 and 3	C) irrational nu	umber		
	D) rational nur	nber greater than 7		
B) $\frac{1}{3}$	C) √3	D) $\sqrt{2}$		
= 27, then the numeri	cal value of $\sqrt{m^{8/3}}$ –	$n^{8/3}$ is:		
B) 2	C) 5	D) 3		
ve integers and a> 1,	which of the followin	g is <u>not</u> true?		
B) $\frac{a^x}{a^{-y}} = a^x a^{-y}$	C) $\frac{a^x}{a^{-y}} = \frac{a^y}{a^{-x}}$	D) $\frac{a^x}{a^y} = \frac{1}{a^{y-x}}$		
cative inverse of 0.02	25?			
B) – 16	C) 16	D) $\frac{-1}{16}$		
ive inverse of 0.6, the	en what is the additive	inverse of a?		
B) $\frac{5}{3}$	C) $\frac{-5}{3}$	D) $\frac{3}{5}$		
	llowing sides can for m cm ΔABC is a right ang ne of the following is $\overline{AC} = 14 \text{ cm}$ CD = 14 cm CB = 18 cm $ABC = 150 \text{ cm}^2$ lder than his daughter s the daughter now? B. 12 years t of five consecutive B. 46 nen what is the value B. 45 er between 2 and 3 B) $\frac{1}{3}$ = 27, then the numeri B) 2 ve integers and a> 1, B) $\frac{a^x}{a^{-y}} = a^x a^{-y}$ cative inverse of 0.07 B) - 16 ive inverse of 0.6, the B) $\frac{5}{2}$	llowing sides can form a right angled trian, m C. 9 cr cm D. 6 cr ΔABC is a right angled triangle with \overline{CD} ne of the following is true? $\overline{AC} = 14 cm$ CD = 14 cm CB = 18 cm ABC = 150 cm ² A lder than his daughter. 5 years ago she was s the daughter now? B. 12 years C. 8 years t of five consecutive integers whose sum is B. 46 C. 45 hen what is the value of $3y(2xy)+5(4x - 2y)$ B. 45 C 42 er between 2 and 3 C) irrational nu D) rational nur B) $\frac{1}{3}$ C) $\sqrt{3}$ = 27, then the numerical value of $\sqrt{m^{8/3} - B}$ B) 2 C) 5 ve integers and a> 1, which of the followin B) $\frac{a^x}{a^{-y}} = a^x a^{-y}$ C) $\frac{a^x}{a^{-y}} = \frac{a^y}{a^{-x}}$ cative inverse of 0.025? B) - 16 C) 16 ive inverse of 0.6, then what is the additive B) $\frac{5}{2}$ C) $\frac{-5}{3}$		

436) What is the m(AXB) in figure to the right, If m (CYD) 50 ^o and m (< BEC) = 60 ^o ?				
A. 120°	B	Ç		
B. 190 ⁰		Y		
C. 240°		D		
D. 60^{0}	A			
437) of a circle is th	e region bounded by	two radii and an inter	cepted arc of the circle.	
A. segment	B. sector	C. tangent	D. secant	
438) Which one of the following	ng lines or segments of	can be drawn through	and interior point of a circle?	
A. A secant line	B. A chord	C. A diameter	D. All	
439) Which of the following q	uestion is not greater	than -2 ?		
I) $\left(-\frac{2}{5}\right) \div \left(\frac{1}{10}\right)$		III) $\left(\frac{2}{5}\right) \div \left(\frac{1}{10}\right)$		
II) $\left(-\frac{1}{10}\right) \div \left(\frac{2}{5}\right)$		$\text{IV}\left(\frac{1}{10}\right) \div \left(\frac{-2}{5}\right)$		
A. I and II	B. II and IV	С. І	D. II and III	
440) What is the solution set o	f 4 x - 3 - 4 = 123	?		
A. {-7,1}	B. {7,1}	C. {-1,7}	D. {-7, -1}	
441) What is the solution set o	f the equation 4(3x-2	(2) - 2(2x - 3) = 6 in the	ne set of negative integer \overline{Z} ?	
A. {1}	B. {4}	C. {-1}	D. Ø	
442) What is the solution set o	f inequality $\frac{3}{2}X - \frac{5}{6}$	$\leq \frac{9x}{8} - 3$ in the set of	f integers?	
A. {6,7,8,}	B. Ø	C. {4,5,6}	D. {1,2,3,4}	
443) W/ro Hirut deposited bir	r 4000 in a bank tha	at pays 7% simple in	terest per annum. In how	
many years will her amou	int be birr 4840?			
A. 6 years	B. 7 years	C. 3 years	D. 5 years	
444) If $(7.4)^2 = 54.76$, then what	t is the square root of	the number 0.5476?		
A. 74	B. 0.74	C. 0.0074	D. 0.074	
445) What is the cube root of t	he number 0.0001253	?		
A. 0.005	B. 0.25	C. 0.025	D. 0.05	
446) The perimeter of a footb	all ground is 460 me	eters. If the length is	30 meters larger than the	
width, then what is the left	ngth of the field?			
A. 130 meters		C. 120mette	ers	
B. 100 meter		D. 110 met	ers	

GRADE – 8 MATHEMATICS 447) What is the slop of the line passing through the point D(-2, -3) and (4,6)? A. $\frac{-3}{2}$ C. $\frac{3}{2}$ B. $\frac{-2}{2}$ D. 9 448) Which one of the following is an equation of a line that passes through the point (4,-2)? A. 2y+3x = -8C. y = 10 - 3xB. Y = 3x - 10D. y - x = 6449) In the figure below $\overline{DE}/\overline{BC}$. If $\overline{AD} = 10$ cm, BC = 12 cm and $\overline{AE} = 8$ cm, then what is the length of AB? A. 6cm B. 10cm C. 20cm Е ∃ C D. 12cm В 450) The sides of a polygon have6,10,14,18 and 24cm. The perimeter of a similar polygon is 180cm. What is the length of the smallest side of larger polygon? A. 12cm B. 20cm C. 36cm D. 15cm 451) A container in shape of rectangular prism has a volume of 240 cubic meters, with a depth of 10 meter. What is the area of the bases of this container? B. 12 m² C. 24 m^2 D. 18 m² A. 48m² 452) The base of a right prism is right angle triangle with legs 3cm and 4cm. If the altitude of the prism is 12cm, then the total surface area is A. 156 cm^2 B. 144 cm^2 C. 150 cm^2 D. 140 cm^2

453) In the figure given to the right, 0 is the center of the circle and $m(\langle BOC \rangle = 142^{\circ})$. What is the

- measure of <BAC?
 - A. 35⁰
 - B. 71⁰
 - C. 142°
 - D. 70°

454) Which of the following lines may NOT have the possibility to passes through the interior point of the circle?

C. a diameter D.A chord A. A secant B. A tangent

45



455) Which one of the following statement is always true about cyclic quadrilaterals?

- A. Consecutive angles are supplementary
- B. Opposite angles are congruent
- C. Opposite angles are supplementary
- D. The vertices of the quadrilateral may not be on the circle

456) In the figure below, 0 is the center of the circle. If $m(\langle ACB \rangle = 72^{\circ})$, what is the measure of \widehat{ACB} ?

- A. 72⁰
- **B.** 144⁰
- C. 216⁰
- D. 36⁰

457) Which one of the following quadrilateral can always be inscribed in a circle?

A. Rectangle

B. Square

- 458) If ∈is an event of the possibility set of an experiment, then which is not true about the probability of the event?
 - A. If \in is an impossible event, then $P(\in) = 0$
 - B. If \in is a certain event, than $P(\in) = 1$
 - C. If \in is any event, then $0 \le P(\in) \le 1$
 - D. If \in is an event, then $P(\in) < 0$ or $P(\in) > 1$

459) A box contains 5 blue, 2 red, 2 white and 1 yellow balls all identical except for colour. If a ball is drawn from the box at random, what is probability that the ball is a white ball?

A. 0.5 B. 0.7 C. 0.8 D. 0.2

460) A pair of fair dice is thrown. What is the probability that the sum of the upper fact is 6?

A.
$$\frac{5}{36}$$
 B. $\frac{2}{9}$ C. $\frac{2}{3}$ D. $\frac{3}{4}$

461) If three coins are thrown at a time. What is the probability of obtaining the same faces?

- A. $\frac{7}{8}$ B. $\frac{3}{8}$ C. $\frac{1}{2}$ D. $\frac{1}{4}$
- 462) Two dice are rolled at a time and the numbers on the face up are read. What is the probability of the numbers facing up add up to 13?
 - A. 0 B. 1 C. $\frac{1}{2}$ D. $\frac{1}{9}$



C. Rhombus

D. A and B

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- 463) A pair of fair dice is thrown. What is the probability that the sum of the scores on the upper face is less than 6?
 - A. $\frac{1}{2}$ B. $\frac{1}{6}$ C. $\frac{5}{18}$ D. $\frac{1}{4}$
- 464) Which one of the following defines the set of positive rational numbers (Q^+) ?
 - A. $\left\{ \frac{a}{b} : a, b \in N \right\}$ C. $\left\{ \frac{a}{b} : a, b \in Z \right\}$ B. $\left\{ \frac{a}{b} : a, b \in \bar{Z} \right\}$ D. A and B

465) Which one of the following statements is true about absolute value equation?

A. 2|x - 4| - 5 = 13 has two solutions

B. 4 - |x - 5| = 4 has one solution

C. |x - 6| + 9 = 8 has no solution

- D. all
- 466) The simplified form of the expression $\frac{3}{4} + 2\left[2 \div \frac{2}{3}\right]$ is B. $\frac{27}{4}$ C. $\frac{15}{1}$ A. $\frac{4}{27}$ D. $\frac{1}{2}$ 467) Which one of the following equation is equivalent to $\frac{2}{3}(6x - 9) = 5$? A. 5 x - 2 = x + 9B. 3x - 5 + x = 6C. A and B D. 5 - 4x = 16468) What is the value of $\frac{(-2x)^2 - 6y^2}{x - y}$ when x = -4 and y = -2? A. -20 C. 18 B. 28 D. 30 469) The sum of the ages of a father and his daughter is 44. Four years ago the father's age was twice as old as his daughter. How old is the father now? A.16 B. 28 C. 20 D. 4
- 470) What is the solution set of the equation $\frac{3}{2}\left(8x \frac{16}{3}\right) 2(2x 3) = 6$ in the set of negative integer \overline{Z} ? A. \emptyset B. $\{-1\}$ C. $\{4\}$ D. $\{1\}$

471) What is the solution set of the inequality $\frac{3}{2}x + 3 \le \frac{9x}{8} + \frac{5}{6}$ in the set of integers? A. {6,7,8,} B. {....-9, -8, -7, -6} D. {0,1,2}

472) A woman invested 2000 birr at simple interest per annum for 5 years and got 700 Birr interest. What is the rate of interest?

 A. 6%
 B. 8%
 C. 7%
 D. 5%

 473) The simplified form of the expression $\sqrt{\frac{2}{11}} X \sqrt{66} X \sqrt{3}$ is
 A. 12
 B. 6
 C. 4
 D. 8

474) Which one of the following is true about a square and a cube number?

A. The cube root of the number 0.000064 is 0.004

B. The square root of the number 0.000064 is 0.04

C. If $8.6^2 = 73.96$, then the square root of the number 0.7396 is 0.086

D. If $8.6^3 = 636.056$, then the cube root of the number 0.636056 is 0.86

475) If
$$X = \frac{-3}{4}$$
 and $Y = \frac{-3}{5}$, then what is the value of $\frac{4x-5y}{8x+20y}$?
A. 0 B. $\frac{1}{3}$ C. $\frac{1}{2}$ D. 2

476) Which one of the following is true about the sum of the integers?

A. The sum of three consecutive integers is 96, then the smallest number is 33. '

B. The sum of three consecutive odd integers is 129, then the greatest integer is 41.

C. The sum of three consecutive even integer is 240, then the middle number is 80.

D. The sum of three consecutive even integers can be 62.

477) What is the solution set of the equation $\frac{4x-7}{2} - \frac{x-6}{2} = \frac{7}{2}$? A. 5 B. -5 C. $\frac{8}{3}$ D. 3 478) The slope and y – intercept of the line 3x - 4y - 6 = 0A. m = $-\frac{3}{4} : b = \frac{3}{2}$ C. m = $\frac{3}{4} : b = \frac{3}{2}$ B. m = $\frac{-3}{4} = \frac{-3}{2}$ D. m = $\frac{3}{4} : b = \frac{-3}{2}$ 479) The slope of the line passing through the points D(2,C) and E (4,5) is -2. What is the value of C?

A. – 9 B. 9 C. – 1 D. 1

480) The ratio of the area of two similar triangles is 16:81. What is the ratio of their corresponding sides?

E

481) In the figure given below, if EH = 16cm, HF = 20cm and $\Delta EGF \sim \Delta EHG$, what is the length of EG?

A. 24

B. 4

C. 12

D. 8



20

A. 49cm^2 B. 98 cm^2 C. 90cm^2 D. 78cm^2

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483) Which one of the following statements is true about angles and areas formed on a circle and inside a circle?

A. The opposite angles of a cyclic quadrilateral are supplementary

- B. The measure of a central angle is equal to the measure of its interrupted are
- C. The measure of inscribed angle is half of its intercepted arc.
- D. All

484) If four coins are thrown at a time. What is probability of obtaining at most one head?

A.
$$\frac{1}{8}$$
 B. $\frac{5}{16}$ C. $\frac{1}{2}$ D. $\frac{1}{16}$

485) Two dice are rolled at a time and the numbers on the face up are read. What is the probability of the numbers facing up add up to less than 11?

A. $\frac{35}{36}$	B. $\frac{1}{2}$	C. $\frac{5}{36}$	D. $\frac{11}{12}$
486) If the diagonal	of a square is $12\sqrt{2}$ cm lor	ng, what is the area of t	he square?
A. 48cm ²	B. 144 cm ²	C. 121 cm^2	D. 44 cm^2

487) In the figure below. $\triangle ABC$ is right angled at C and \overline{CD} is an altitude of $\triangle ABC$. If the length

of \overline{CD} is 16cm, and the length of AD = 8cm, what is the length of BC?

A. $16\sqrt{5cm}$ CB. 16cmCC. 32cmBD. 8cmB

488) Corresponding values of x and y are given as shown on the table below.



489) In the figure below, if \overline{BE} and \overline{AD} are altitudes of $\triangle ABC$, which of the following similarity



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490) What is the sum of	of the first 10 even nu	imbers?		
A. 100	B . 110	C. 200	D. 210	
491) Which one of the	following number is	not a rational numb	er	
A. $\sqrt{49}$	B7	C. ³ √27	D. √8	
492) The solution of the	ne inequality 2(x-5)>2	2x-11 in the set of N		
A. Ø	B. N	C. {1,2,31	0} D. {11,12,13}	
493) Which one of the	following equation h	as positive slope?		
A. 2y+5=7	B. 4x-8=12	C2y+4x=6	D. 2y-3x=-6	
494) Two equilateral t	riangles are always si	milar. We can check	x by using	
A. AA similarity theorem		C. SAS similar	C. SAS similarity theorem	
B. SSS similarity theorem		D. all	D. all	
495) The side of a trian A. <a< td=""><td>ngle are 4cm,6cm and</td><td>l 8cm. what is the la B ▲</td><td>rgest angle?</td></a<>	ngle are 4cm,6cm and	l 8cm. what is the la B ▲	rgest angle?	
B. <b< td=""><td></td><td>4 6</td><td></td></b<>		4 6		
C. <c< td=""><td>/</td><td></td><td></td></c<>	/			
D. All are equal	s A	8 C		
496) The sum of 5 con	secutive numbers is '	710 Will at is the laws	tost number?	
	iscentive indiffeets is	710. What is the larg		
A. 141	B. 143	C. 144	D. 145	
A. 141 497) In a class there ar	B. 143 re 12 boys and 24 girl	C. 144 S. What is the proba	D. 145 bility of getting a boy from the class?	
A. 141 497) In a class there an A. $\frac{1}{4}$	B. 143 re 12 boys and 24 girl B. $\frac{1}{3}$	C. 144 C. What is the proba C. $\frac{1}{2}$	D. 145 bility of getting a boy from the class? D. $\frac{1}{6}$	
A. 141 497) In a class there ar A. $\frac{1}{4}$ 498) The lateral surface	B. 143 re 12 boys and 24 girl B. $\frac{1}{3}$ re area of a cube is 19	C. 144 C. 144 S. What is the proba C. $\frac{1}{2}$ Gcm ² . What is the to	D. 145 bility of getting a boy from the class? D. $\frac{1}{6}$ btal surface area of the cube?	
A. 141 497) In a class there ar A. $\frac{1}{4}$ 498) The lateral surface A. 294cm ²	B. 143 The 12 boys and 24 girl B. $\frac{1}{3}$ The area of a cube is 19 B. 343cm ²	C. 144 C. 144 S. What is the proba C. $\frac{1}{2}$ C. $\frac{1}{2}$ C. 286cm ²	D. 145 bility of getting a boy from the class? D. $\frac{1}{6}$ btal surface area of the cube? D. 216cm ²	
A. 141 497) In a class there at A. $\frac{1}{4}$ 498) The lateral surfac A. 294cm ² 499) What is the proba	B. 143 B. 143 The 12 boys and 24 girl B. $\frac{1}{3}$ The area of a cube is 19 B. 343cm ² ability of gating a vov	C. 144 C. 144 S. What is the proba C. $\frac{1}{2}$ C. $\frac{1}{2}$ C. 286cm ² vel letter in the word	D. 145 bility of getting a boy from the class? D. $\frac{1}{6}$ btal surface area of the cube? D. 216cm ²	
A. 141 497) In a class there at A. $\frac{1}{4}$ 498) The lateral surfac A. 294cm ² 499) What is the proba A. $\frac{5}{11}$	B. 143 B. 143 re 12 boys and 24 gir. B. $\frac{1}{3}$ ce area of a cube is 19 B. 343cm ² ability of gating a vov B. $\frac{4}{11}$	C. 144 C. 144 S. What is the proba C. $\frac{1}{2}$ C. 286cm ² vel letter in the word C. $\frac{6}{11}$	D. 145 bility of getting a boy from the class? D. $\frac{1}{6}$ bility of getting a boy from the class? D. $\frac{1}{6}$ D. 216cm ² D. $\frac{7}{11}$	
A. 141 497) In a class there an A. $\frac{1}{4}$ 498) The lateral surface A. 294cm ² 499) What is the proba A. $\frac{5}{11}$ 500) If $n(\in)=n(S)$ the	B. 143 B. 143 re 12 boys and 24 gir. B. $\frac{1}{3}$ ce area of a cube is 19 B. 343cm ² ability of gating a vov B. $\frac{4}{11}$ en the probability of a	C. 144 C. 144 S. What is the proba C. $\frac{1}{2}$ C. 286cm ² vel letter in the word C. $\frac{6}{11}$ in event is	D. 145 bility of getting a boy from the class? D. $\frac{1}{6}$ btal surface area of the cube? D. 216cm ² I MATHEMATICS? D. $\frac{7}{11}$	

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