

BOLE SUB- CITY ADMINISTRATION EDUCATIONAL BUREAU

MODEL EXAMINATION FOR GRADE EIGHT

MATHEMATICS

MAY 2023/GINBOT 2015

NUMBER OF QUESTIONS: 40
ALLOWED: -1 HOUR

TIME

GENERAL INSTRUCTIONS

THIS BOOKLET CONTAINS **MATHEMATICS** EXAMINATION. IN THIS EXAMINATION THERE ARE TOTAL OF 40 MULTIPLE CHOICE QUESTIONS CAREFULLY SELECT THE **CORRECT ANSWER** AND **BLACKEN** ONLY THE LETTERS OF YOUR CHOICE ON THE SEPARATE ANSWER SHEET PROVIDED.

FOLLOW THE INSTRUCTIONS ON THE ANSWER SHEET AND THE EXAMINATION PAPER CAREFULLY. **USE ONLY PENCIL** TO MARK YOUR ANSWER. YOUR ANSWERS SHOULD BE **HEAVY** AND **DARK** COVERING THE ANSWER SHEET COMPLETELY FROM YOUR ANSWER SHEET.

YOU ARE ALLOWED TO WORK ON THE EXAM FOR 1 HOUR. WHEN TIME IS CALLED YOU MUST IMMEDIATELY STOP WORKING, PUT YOUR PENCIL DOWN AND WAIT FOR FURTHER INSTRUCTIONS.

ANY FORM OF CHEATING OR AN ATTEMPT TO CHEAT IN THE EXAMINATION WILL RESULT IN AN AUTOMATIC DISMISSAL FROM THE EXAMINATION HALL AND CANCELLATION OF YOUR SCORE.

PLEASE MAKE SURE THAT YOU HAVE WRITTEN **ALL THE REQUIRED INFORMATION** ON THE ANSWER SHEET BEFORE YOU START TO WORK ON THE EXAMINATION.

DON'T TURN THIS PAGE UNTIL YOU START TO WORK ON THE EXAMINATION.

1. Which of the following is **incorrect** about the relationship between **N, Q, W** and **Z**

A, $W \subseteq Q$ B, $Z \subseteq N$ C, $N \subseteq W$ D, $Q \subseteq W$

2. What is the solution set of equation $-3|2-5x|=15$

A, $\left\{\frac{7}{5}, \frac{-3}{5}\right\}$ B, $\left\{\frac{7}{5}\right\}$ C, $\{ \}$ D, $\left\{4, \frac{-3}{5}\right\}$

3. Which of the following statement is **not** true

A, every negative rational number is less than zero
B, every positive rational number is greater than zero
C, zero is less than every positive rational number
D, every negative rational number is greater than every positive rational number

4. Which of the following list of rational number is written in descending order

A, $\frac{1}{4}, \frac{1}{3}, \frac{1}{5}$ C, $\frac{6}{7}, \frac{3}{4}, \frac{1}{2}$
B, $\frac{5}{8}, \frac{9}{10}, \frac{11}{12}$ D, $\frac{2}{3}, \frac{3}{4}, \frac{1}{2}$

5. When we simplify the expression $\frac{3}{5}\left(\frac{7}{9}-\frac{2}{9}\right) \div \frac{8}{9}$ the result is

A, $\frac{8}{27}$ B, $\frac{1}{2}$ C, $\frac{3}{8}$ D, $\frac{3}{5}$

6. What is the value of $-5.8 - (-12.02)$

A, -17.82 B, 6.22 C, -6.22 D, 17.82

7. Which of the following statement is **not** correct about the properties of rational number

A, $a + (b + c) = (a + b) + c$
B, $a + b = b + a$
C, $a \times (b - c) = (a \times b) - (a \times c)$

D. $a \times 0 = a$

8. If birr 8000 is invested at 5% simple interest per annum. Then what is simple interest after 3 month

A. Birr 150 B. Birr 1200 C. Birr 800
D. Birr 100

9. Which of the following rational number is both perfect square and perfect cube?

A. 125 B. 64 C. 1000
D. 144

10. If $(5.24)^2 = 27.458$ then $(52.4)^2 = ?$

A. 2745.8 B. 274.58 C. 0.27458
D. 27458

11. If $\sqrt[3]{x} = -3$ then the value of x is

A. -27 B. 27 C. -9 D. 9

12. Which one of the following statement is not correct

A. $2^3 = 2 \times 3$ C. $8^3 = 64 \times 8$
B. $\left(\frac{3}{4}\right)^3 = \frac{27}{64}$ D. $(-3)^3 = -27$

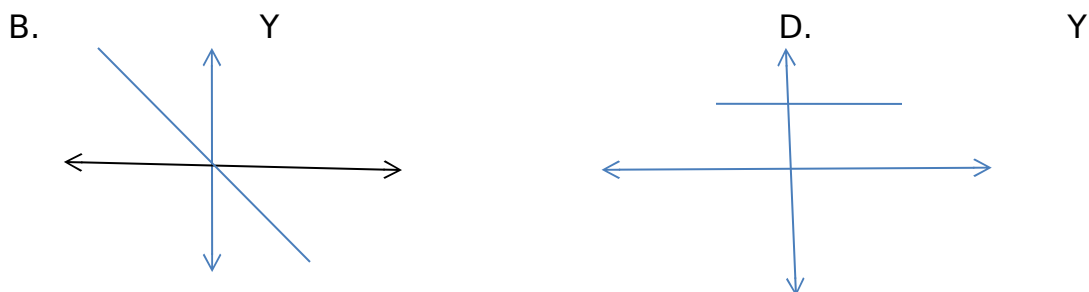
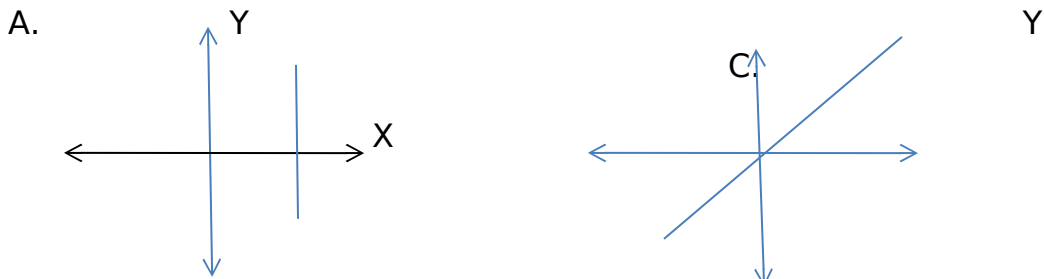
13. What is the side of a square if its area is 841 cm^2

A. 41cm B. 29 cm C. 31 cm
D. 19 cm

14. Which pair of coordinate and quadrants is paired correctly?

A. (-2, 4) and quadrant IV C. (-2, -3) and quadrant I
B. (5, -2) and quadrant IV D. (0, -2) and quadrant III

15. Which of the following graph having a positive slope



X

X

16. Which of the following inequality has no solution in the set of whole number

A. $5 - 2X > 3$

C. $\frac{1}{4}X + 1 < 3$

B. $5(X + 2) < 10$

D. $3X - 5 > 2X + 1$

17. Which of the following pair of inequality are equivalent

A. $1 - 5X > -9$ and $x > 2$

B. $3x + 1 < 7$ and $\frac{1}{2}x < 1$

C. $2x + 8 < 0$ and $x < 4$

D. $2 - 3x > 1$ and $x < 1$

18. Nejat is 30 years old and her brother Abdi is 12 years old. After how many years will Nejat be exactly twice as old as Abdi?

A. 2

B. 8

C. 6

D. 4

19. Which of the following plane figures are not necessarily similar to each other

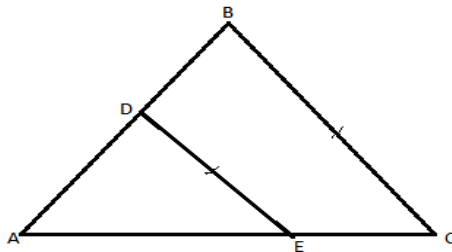
A. Any two rectangle

B. Any two circles

C. Any two equilateral triangle

D. Any two square

20. Consider the figure given below. If the line segment DE parallel to BC by what similarity theorem $\triangle ABC$ $\triangle ADE$?



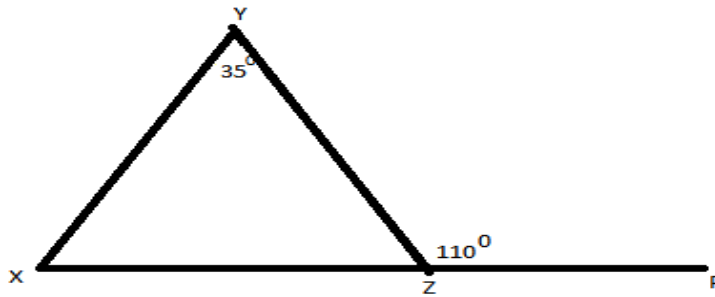
A. SSS similarity theorem

B. SAS similarity theorem

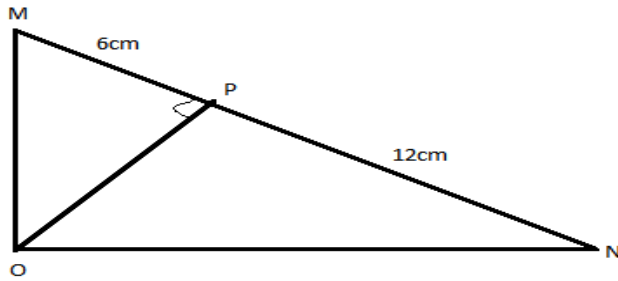
C. AA similarity theorem

D. ASA similarity theorem

21. The perimeter of triangle is 20cm and 80 cm respectively what is the area of the larger triangle? if the area of the smaller triangle is 36cm^2
- A. 9cm^2 B. 18cm^2 C. 72cm^2 D. 576 cm^2
22. The measure of the three interior angle of a triangle is in the ratio 3:4:5 what is the measure the smallest interior angles of a triangle?
- A. 75° B. 60° C. 30° D. 45°
23. Suppose XYZ triangle where $M(\angle YZP) = 110^\circ$ and $M(\angle XYZ) = 35^\circ$ as show in the figure given below

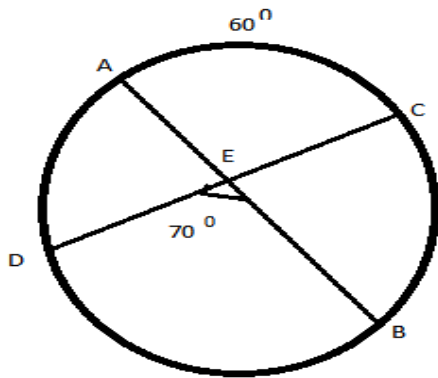


- A. 70° B. 45° C. 75° D. 145°
24. Which of the following triplet cannot represents side of right angled triangle
- A. 5,12,13 B. 6,8,10 C. 8,16, 18 D. 20,21,20
25. A car travels 12km due to west and then 16km due to north. How far is the car from the starting point?
- A. 18km B. 28km C. 20km D. 22km
26. In the figure given below $\triangle MNO$ is right angle triangle with an altitude OP what is the length of MO



- A. $6\sqrt{6}$ B. $6\sqrt{2}$ C. 6 D. $6\sqrt{3}$

27. A part of a circle bounded by two radii and their intercepted arc is
 A. Segment B. sector C. secant D. Semi - arc
28. In the figure given below O is the center of the circle if $m(\angle ABC) = 80^\circ$ and measure of arc AC is 50° . Then what is the measure of $m(\angle AOD)$
 A. 110° B. 130° C. 80° D. 160°
29. In the figure given below line segment CD and AB intersecting inside the circle at E if $m(\angle AEC) = 70^\circ$ and measure of arc AC is 60° then what is the measure of arc BD



- A. 60° B. 70° C. 130° D. 80°
30. Bereket observes that the time is 6:00 hours. What is the angle between the hands of the clock?
 A. 90° B. 120° C. 150° D. 180°
31. Which of the following statements is correct
 A. Pyramid is a cone
 B. A triangular pyramid has three vertices and three faces
 C. The right pyramid whose altitude passes through the center of the circle
 D. A pyramid can have a parallel face

32. The sides of rectangular prism are 3cm, 6cm and 8cm. then what is the total surface area of the prism?

- A. $144cm^2$ B. $162cm^2$ C. $180cm^2$ D. $120cm^2$

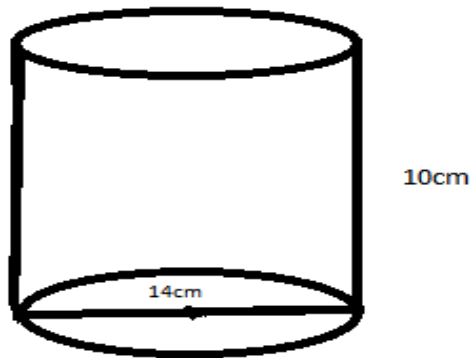
33. The lateral surface area of a cylinder is $96cm^2$ and whose radius is 4cm what is the length of its height?

- A. 12cm B. 6cm C. 8cm D. 10cm

34. If the base area of a triangular prism is $32cm^2$ and its height is 5cm then what is the volume of the prism?

- A. $27cm^3$ B. $160cm^3$ C. $120cm^3$ D. $37cm^3$

35. In the figure given below, what is the volume of a cylinder? (Use $\pi = \frac{22}{7}$)



- A. $1540cm^3$ B. $870cm^3$ C. $140cm^3$
D. $930cm^3$

36. A medicine company store goods in rectangular dimensions 6cm, 13cm and 4cm. if the volume of one package of the goods is $8cm^3$. How many packages of goods have in the store?

- A. 52 package B. 39 package C. 78package D. 24package

37. Which of the following is impossible event?

- A. the rain will be rain tomorrow
B. the newly born baby will be boy
C. the sun raise in the east
D. if water boils at $100^\circ C$ changed to milk

38. When a fair dies is rolling. Then what is the probability of getting odd?

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

39. An integer is chosen at random out of the integers between 0 and 21 what is the probability of getting multiple of 5?

A. $\frac{1}{5}$

B. $\frac{1}{2}$

C. $\frac{3}{5}$

D. $\frac{2}{3}$

40. In a class there are 16 boys and 24 girls the teacher calls on a student at random to solve the problem. What is the probability that the first person called a girl?

A. $\frac{2}{5}$

B. $\frac{3}{5}$

C. $\frac{1}{4}$

D. $\frac{5}{6}$