

073204T4PLM

PLUMBER LEVEL 4

CON/OS/PL/CC/01/4/A

APPLY BASIC MATHEMATICS

March / April 2023



THE KENYA NATIONAL EXAMINATIONS COUNCIL

WRITTEN ASSESSMENT

Time: 2 hours.

INSTRUCTIONS TO CANDIDATE

- i. This paper has two sections **A** and **B**. Attempt questions in each section as per instructions given in the section.
- ii. You are provided with a separate answer booklet.
- iii. Marks for each question are indicated in the brackets.
- iv. Do not write on the question paper

This paper consists of FIVE (5) printed pages. Candidates should check the question paper to ascertain that all pages are printed as indicated and that no questions are missing

SECTION A: MULTIPLE CHOICE QUESTIONS (10MARKS)

In this section, each question carries one (1) mark. Attempt all questions in this section. Choose the correct answer and write it in the answer booklet provided.

1. What do you obtain when you combine terms: $14a + 30b - 4b - 18a$?
 - A. $-4a + 26b$
 - B. $-28a + 30b$
 - C. $-4a + 22b$
 - D. $28a + 30b$

2. Simplify: $(4 - 5) - (13 - 17 + 2)$.
 - A. -1
 - B. -2
 - C. 1
 - D. 2

3. What is $|-26|$?
 - A. -26
 - B. 26
 - C. 0
 - D. 1

4. Multiply: $(x - 6)(x + 7)$
 - A. $x^2 + 5x - 20$
 - B. $x^2 - 4x - 20$
 - C. $x^2 + x - 42$
 - D. $x^2 - x - 20$

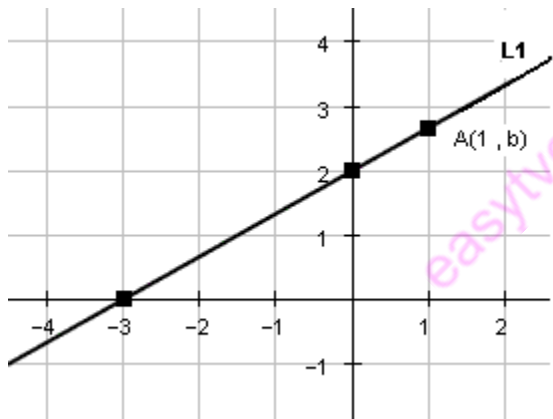
5. Factor: $5x^2 - 15x - 20$.
 - A. $5(x-4)(x+1)$
 - B. $-2(x-4)(x+5)$
 - C. $-5(x+4)(x-1)$
 - D. $5(x+4)(x+1)$

6. Solve for x : $2x - y = \frac{3}{4}x + 6$.
- A. $(y + 6)/5$
 - B. $4(y + 6)/5$
 - C. $(y + 6)$
 - D. $4(y - 6)/5$
7. Find the value of $3 + 2 \cdot (8 - 2)$
- A. 25
 - B. 15
 - C. 17
 - D. 24
8. Which is greater than -1?
- A. -3
 - B. -5
 - C. $-1/2$
 - D. -25
9. How many different factors does 96 have, excluding 1 and 96?
- A. 12
 - B. 4
 - C. 8
 - D. 10
10. How many different factors does 48 have, excluding 1 and 48? If the sum of the interior angles of a regular polygon measures up to 1440 degrees, how many sides does the polygon have?
- A. 10 sides
 - B. 8 sides
 - C. 12 sides
 - D. 9 sides

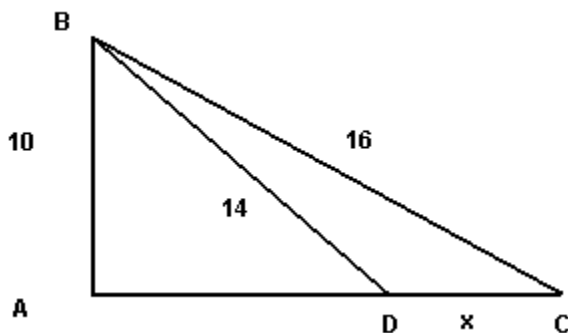
SECTION B (40 MARKS)

Attempt all the given questions

11. Simplify : $(6x^2 - 2x) - (-5x^2 - 8x)$. (2 Marks)
12. Solve for x and y. (3 Marks)
- $x + y = 8$
 $x - y = 4$
13. Rice weighing $33\frac{3}{4}$ Kgs was divided equally and placed in 4 containers. How many grams of rice were in each? (2 Marks)
14. Factor: $16b^3 - u4b^3$ (4 Marks)
15. What is the radius of a circle that has a circumference of 3.14 meters? (3 Marks)
16. Evaluate: $(a^2 - 2cb) + b^3$ if $a = 8$, $b = 6$ and $c = 5$. (3 Marks)
17. Line L1 passes through the point $(1, b)$. Find the equation of line L2 that passes through point A and is perpendicular to line L1. (4 Marks)



18. ABC is a right triangle with a right angle at A. Find x the length of DC. (3 Marks)



19. For what value of m will the roots of the quadratic equation $x^2 + mx + 4 = 0$ have real and equal roots? (3 Marks)
20. The average of 5 quantities is 6. The average of 3 of them is 8. What is the average of the remaining two numbers? (3 Marks)
21. Solve the inequality $3^{3x-2} > 1$ (4 Marks)
22. A 5 cubic centimeter cube is painted on all its side. If it is sliced into 1 cubic centimeter cubes, how many 1 cubic centimeter cubes will have exactly one of their sides painted? (3 Marks)
23. If the diagonal and the area of a rectangle are 25 m and 168 m², what is the length of the rectangle? (3 Marks)

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