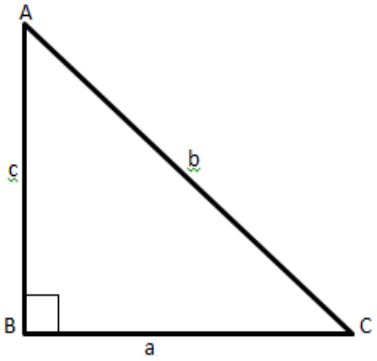
TRINITY HOME COLLEGE
SABO OJOO, IBADAN
SECOND TERM EXAMINATION 2019/2020 SESSION

SUBJECT: MATHEMATICS
DURATION: 2 hours
CLASS: J.S.S 3
INSTRUCTION: ANSWER ALL QUESTIONS IN SECTIONS A AND B

SECTION A

1. Factorize $m^2 + m - 6$ (a) $(m-2)(m-3)$ (b) $(m+2)(m+3)$ (c) $(m+2)(m-3)$ (d) $(m-2)(m+3)$
2. What is 0.125 of N816.00 (a) N125.00 (b) N102.00 (c) N102.00 (d) N8160.00
3. Divide 1001_2 by 11_2 (a) 12_2 (b) 111_2 (c) 33_2 (d) 11_2
4. The cost of three exercise books is N45.00. What is the cost of x exercise book? (a) N15x (b) N15+x (c)N150x (d) N45x
5. Solve $3(4-5u) - 2(7-4u) = -5u$ (a) 4 (b) 1 (c) -1 (d) -2
6. Convert 569_{ten} to base 8 (a) 1027_{eight} (b) 569_{eight} (c) 1071_{eight} (d) 2341_{eight}
7. When 4 is divided by $(x-7)$ the result is the same as when 3 is divided by $(x+4)$, find the value of x. (a) 37 (b) 27 (c) -37 (d) -27
8. Solve $\frac{1}{y} + \frac{2}{3} = \frac{3}{4}$ (a) 12 (b) 9 (c) 8 (d) 6
9. Find the L.C.M of $15a^2$ and $3a^2y^2$ (a) $15a^2y$ (b) $3a^2y$ (c) $15a^2y^2$ (d) None of the above
10. How long would it take an investment to triple at 20% per annum in a simple interest? (a)4 years (b) 3 years (c) 10 years (d) 8 years
11. Solve $\frac{6}{x-4} = \frac{5}{x+2}$. (a) 20 (b) 32 (c) -32 (d) 26
12. Which of this is a rational number? (a) $2\sqrt{3}$ (b) $2\sqrt{7}$ (c) $\sqrt{36}$ (d) $\sqrt{5}$
13. Find the interest on N30,000.00, 2 years at 40% per annum compound interest (a) N28,800.00 (b) N32,200.00 (c) N58,800.00 (d) N30,000.00
14. At what point will the graph of $y = 4x - 3$ cut the y-axis? (a) $(0, -3)$ (b) $(0, -4)$ (c) $(0, 3)$ (d) $(-3, 0)$
15. The average age of 6 men is 49 years and the average age of 5 men is 47 years. What is the age of the sixth man? (a) 59 years (b) 48 years (c) 49 years (d) 58 years
16. Triangle ABC is a right-angled triangle of sides a, b, c. Which of the following gives the value of b in terms of a and c?

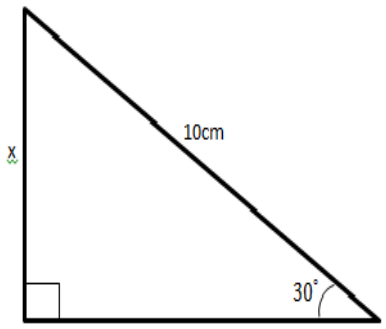


(a) $c - a$ (b) $a + c$ (c) $c^2 - a^2$ (d) $\sqrt{a^2 + c^2}$

17. Calculate the total amount to be paid back on N600.00 borrowed for $2\frac{1}{2}$ years at 5% per annum compound interest. (a) N675.00 (b) N750.00 (c) N1500.00 (d) N1675.00

18. Find the value of $\sqrt{1\frac{9}{16}}$ (a) $\frac{3}{4}$ (b) $\frac{4}{5}$ (c) $1\frac{1}{4}$ (d) $1\frac{1}{3}$

19. Find the value of x in the figure below

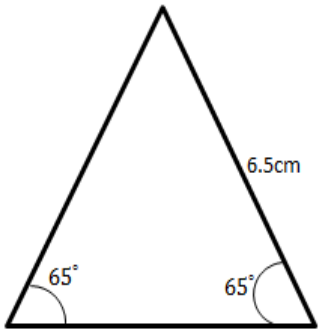


(a) 0.5cm (b) 0.8660cm (c) 5.0cm (d) 8.66cm

20. If $3x + 7y = 1$ and $x - 7y = 19$, what is the value of x? (a) -10 (b) -9 (c) -5 (d) 5

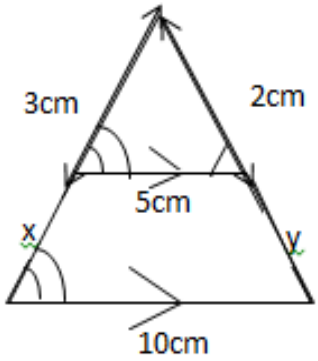
SECTION B

(1a) Find the area of the diagram below.



(5 marks)

(1b) Find x and y in the figure below



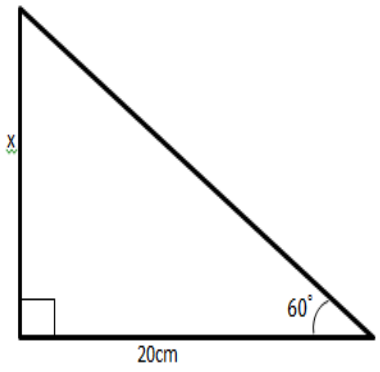
(5 marks)

(1c) A man is 26 years older than his daughter. He is also 8 years older than three times his daughter's age. Find the daughter's age. (2 marks)

(1d) Solve the simultaneous linear equations $2x - 5y = 16$ and $x + 5 = -4y$. Find the value of $x + y$ (5 marks)

(2a) A woman buys a car for N400,000.00, she estimates that its value will depreciate each year by 25% of its value at the beginning of the year. Find the depreciated value of the car at the beginning of the third year. (5 marks)

(2b) Find the length of x to the nearest meter.

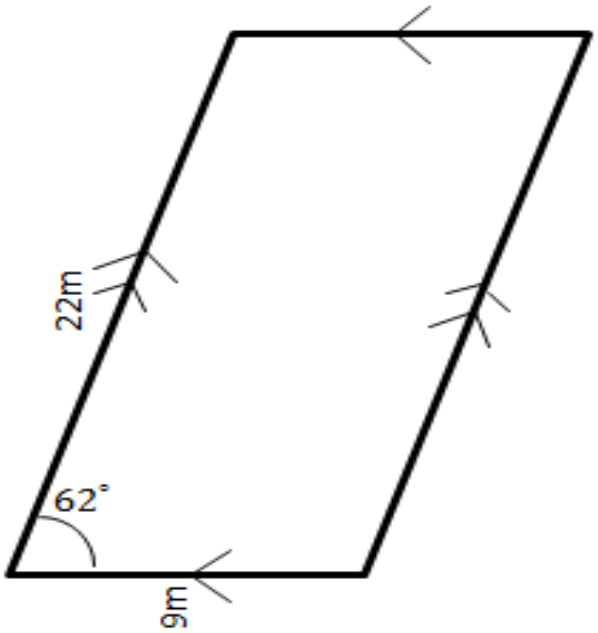


(5 marks)

(2c) Expand $(4y - d)(3y - 3d)$ (1 mark)

(2d) Solve $\frac{1}{x-3} - \frac{2}{x-4} = 0$ (2 marks)

(2d) Find the area of the shape below.



(3 marks)

2e Without using calculators, simplify

$$3\frac{4}{9} \div (5\frac{1}{3} - 2\frac{3}{4}) + 5\frac{9}{10} \qquad (7marks)$$