2019 BECE MATHEMATICS 2

MATHEMATICS 2

1. (a) Given that x = {whole numbers from 4 to 13} and y = {multiples of 3 between 2 and 20}, find $X \cap Y$.

(b) Find the Least Common Multiple (L.C.M) of the following numbers: 3, 5, and 9.

(c) If $\frac{p+2q}{p} = \frac{7}{5}$, , find the value of $\frac{q}{p}$, $where\ p \neq 0$.

2. (a) Solve: $\frac{4x+5}{5} + \frac{x-3}{4} = -1.$

(b) The ratio of boys to girls in a school is 12:25. If there are 120 boys.
(i) how many girls are in the school?
(ii) what is the total number of boys and girls in the school?

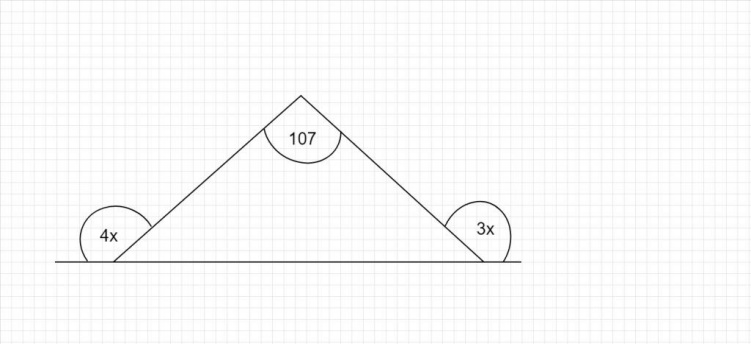
(c) Simplify:$\left(8x^2y^3\right)\left(\frac{3}{8}xy^4\right)$

3. (a) In an examination, 60 candidates passed Integrated Science or Mathematics. If 15 passed both subjects and 9 more passed Mathematics than Integrated Science, find the:
(i) number of candidates who passed each subject
(ii) probability that a candidate passed exactly one subject.

(b) Factorize: xy+6x+3y+18.

4. (a) Express 250% as a fraction in its lowest term.

(b)



Use the diagram to find the value of x.

(c) Simplify: $2 \div \left(\frac{15}{64} + \frac{6}{7}\right)$

(d) if $q = \begin{pmatrix} 7 \\ -1 \end{pmatrix} and\ r = \begin{pmatrix} 4 \\ -5 \end{pmatrix} and$ find (q + r)

x	1	2	3	4	5
↓	↓	↓	↓	↓	↓
y	0	3	6	9	12

5. (a)

The mapping shows the relationship between x and y.
using a scale of 2cm to 1unit on the x-axis and 2 cm to 2 units on the y-axis, draw two perpendicular axes 0x and 0y on a graph sheet for $1 \leq x \leq 5 and 0 \leq y \leq 14;$

plot the point for each ordered pair, $(x,\ y)$.
Join the points with a straight line;
Using the graph, find the gradient of the line in 5 (a)(iii);
Use the graph to find the equation of the line in 5 (a)(iii).

6. The marks obtained by students in a class test were

4 8 7 6 7
2 1 7 4 7
3 7 8 4 3
7 5 2 7 2
5 4 8 3 2

(a) construct a frequency distribution table for the data.

(b) Find the:
(i) mode of the distribution;
(ii) median mark of the test;
(iii) mean mark.