2019 BECE MATHEMATICS 1

MATHEMATICS 1

1. Given that

$A.\ 4, 8$

$B.\ 2, 8, 12$

$C.\ 4, 6, 8, 12$

$D.\ 2, 4, 6, 8, 10, 12$

2. Express 0.000344 in standard form.

$A.\ 3.44 \times 10^{-6}$

$B.\ 3.44 \times 10^{-5}$

$C.\ 3.44 \times 10^{-4}$

$D.\ 3.44 \times 10^{-3}$

3. Which of the following numbers is the largest?

A. – 70
B. – 50
C. – 3
D. – 2

4. Correct 0.024561 to three significant figures.

A. 0.03
B. 0.025
C. 0.0245
D. 0.0246

5. Simplify: $(7^5 \times 7^3) \div 7^6$

$A.\ 7^9$

$B.\ 7^4$

$C.\ 7^3$

$D.\ 7^2$

6. How many lines of symmetry has a square?

A. 0
B. 1
C. 2
D. 4

7. Solve the equation $10 - \frac{(x+3)}{2} = 8.$

A. – 9
B. – 3
C. 1
D. 15

8. Factorize: kx+2xt-4k-8t.

A. (k-2t)(x+4)
B. (k+2t)(x+4)
C. (k+t)(x-4)
D. (k+2t)(x-4)

9. There are 12 boys and 18 girls in a class. Find the fraction of boys in the class.

A. 2/5
B. 3/5
C. 2/3
D. 3/4

10. Express 30% as a fraction in its lowest term.

A. 7/10
B. 3/20
C. 7/20
D. 3/10

11. Make k the subject of the relation, , $ky - k = y^2$.

$A.\ k = \frac{y^2}{y-1}$

$B.\ k = \frac{y^2}{y+1}$

$C.\ k = -\frac{y^2+1}{y+1}$

$D.\ k = \frac{y^2+1}{y-1}$

12. The mean of the numbers 5, 2x, 4 and 3 is 5. Find the value of x.

A 3
B 4
C 5
D 8

13. Find the rule of the mapping:

x	1	2	3	4	5
↓	↓	↓	↓	↓	↓
y	3	1	-1	-3	-5

$A.\ y = 2x + 2$

$B.\ y = -2x + 2$

$C.\ y = 4x$

$D.\ y = -2x + 5$

14. The two sides of a parallelogram are 4.8m and 7.2m long. Finds its perimeter.

A. 48.0 m
B. 34.6 m
C. 24.0 m
D. 17.3 m

15. A tank in the form of a cuboid has length 6m and breadth 4m. If the volume of the tank is 36m2, find the height.

A. 0.67m
B. 1.5m
C. 1.8m
D. 5.0m

16. If the bearing of A from B is 240°, find the bearing of B from A.

A. 040°
B. 060°
C. 120°
D. 300°

17. Find the truth set of the inequality 2y+5<4y-5. A. {y:y>5}

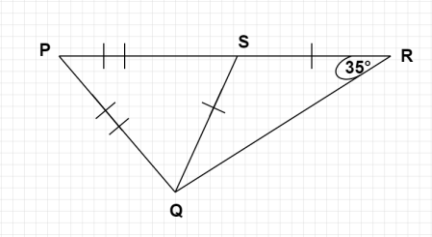
B. {y:y<5} C. {y:y>1}
D. {y:y>0}

18. Find the gradient of the straight line which passes through the points (-3,4) and (3,-2).

A. 2
B. 1
C. – 2
D. – 1

19. If 6:8=r:48, find the value of r.

A. 36
B. 34
C. 14
D. 12



20. Find $\angle QPS$ in the diagram.

A. 70°
B. 40°
C. 35°
D. 20°

21. A man travelled a distance of 8km in an hour. How long will it take him to cover a distance of 12km, travelling at the same speed?

$A.\ 1\frac{1}{3}hrs$

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

$C\ 1\frac{3}{4}hrs$

$D\ 2\ hrs$

22. A number is selected at random from: 25,26,27,28… 35. Find the probability that the number selected is a prime number.

A. 6/11
B. 3/11

C. 2/11
D. 1/11

23. Express $\frac{12}{25}$in decimal fraction.

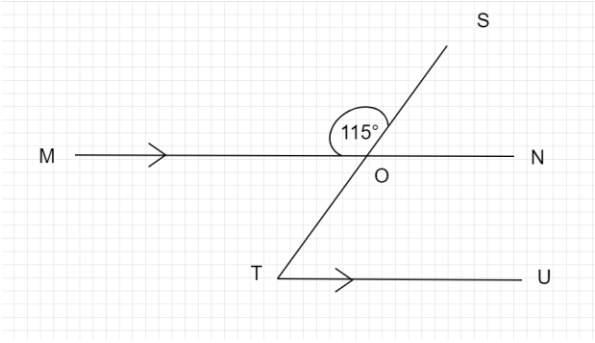
A. 0.0408
B. 0.048
C. 0.408
D. 0.48

24. Find the diameter of a circle whose circumference is 88cm. $\left[take\ \pi = \frac{22}{7}\right]$.

A. 14 cm
B. 22 cm
C. 28 cm
D. 20 cm

25. When twelve is subtracted from three times a certain number and the result is divided by four, the answer is eighteen. Find the number.

A. 84
B. 40
C. 28
D. 20



26. In the diagram, line MN is parallel to line TU, line MN at O and Angle MQS=115°. Find Angle OTU.

A. 65°
B. 55°
C. 45°
D. 25°

27. Given that $r = \begin{pmatrix} -3 \\ -5 \end{pmatrix}\ and\ t = \begin{pmatrix} 3 \\ 5 \end{pmatrix},\ find\ r + t.$

A. $\begin{pmatrix} -6 \\ 10 \end{pmatrix}$

B. $\begin{pmatrix} -6 \\ -10 \end{pmatrix}$

C. $\begin{pmatrix} 0 \\ -10 \end{pmatrix}$

D. $\begin{pmatrix} 6 \\ 10 \end{pmatrix}$

28. A trader sold 90 oranges at 3 for GH₵ 0.75. How much did she get from selling all the oranges?

A. GH₵ 22.50
B. GH₵ 67.50
C. GH₵ 75.00
D. GH₵ 225.50

29. Express 72 as a product of prime factors

A. $2^3 \times 3^2$

B. $2^2 \times 3^3$

C. $2^2 \times 3^2$

D. 2×3

30. Simplify: $3a \times 24ab.$

A. $27\ ab^2$

B. $27a^2b$

C. $72ab^2$

D. $72a^2b$

31. Simplify: $\begin{pmatrix} -2 \\ 3 \end{pmatrix} + \begin{pmatrix} -1 \\ 5 \end{pmatrix}$

A. $\left(-3 - 2\begin{pmatrix} -3 \\ -2 \end{pmatrix}\right.$ B. $\begin{pmatrix} -1 \\ 2 \end{pmatrix}$ C. $\begin{pmatrix} -3 \\ 8 \end{pmatrix}$ D. $\begin{pmatrix} -1 \\ -2 \end{pmatrix}$

32. Multiply 247 by 32

A. 6916
B. 7804

C. 7904
D. 1235

33. Evaluate: $(0.07 \times 0.02) \div 14$.

A. 0.01
B. 0.001
C. 0.0001
D. 0.00001

34. In a class of 23 students, the girls were 7 more than the boys. How many boys were in the class?

A. 8
B. 15
C. 16
D. 30

35. Express 30 minutes as a percentage of 3 hours 20 minutes.

A. 12.5 %
B. 15 %
C. $16\frac{2}{3}$
D. 20 %

36. Find the Least Common Multiple (LCM) of 2, 3 and 5.

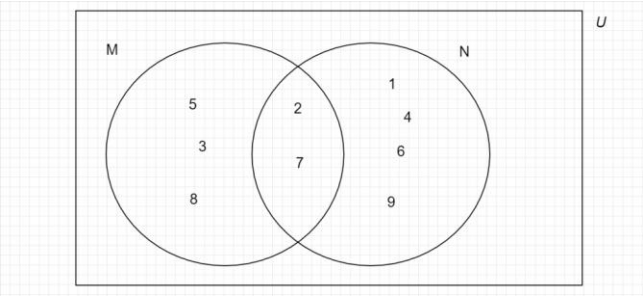
A. 6
B. 12
C. 24
D. 30

37. The simple interest on GH₵ 450.00 for 4 years is GH₵ 45.00, find the rate of interest.

A. 2.5 %
B. 10 %
C. 25 %
D. 6.5 %

38. Find the median of the following numbers: 46, 68, 34, 37, 76 and 81.

A. 35.5
B. 57
C. 67
D. 68



In the Venn diagram M and N are the subsets of the universal set U. Use this information to answer questions 39 and 40.

39. Find $M \cap N$.

A. {7}
B. {2,7}
C. {3,5,8}
D. {1,2,3,4,5,6,7,8,9}

40. How many members are om the set N?

A. 2
B. 3
C. 4
D. 6