

1. The value of $\frac{1}{8} + \frac{2}{5}$ is

- A $\frac{3}{40}$
- ~~B $\frac{3}{13}$~~
- ~~C $\frac{21}{40}$~~
- D $\frac{2}{40}$

2. Given that $3^{-2} \times 3^p = 27$, then p has the value

- A -5
- ~~B 5~~
- C $\frac{1}{5}$
- D $-\frac{1}{5}$

3. The denary number 27 expressed in binary system is

- A 11101
- B 1011
- C 1101
- ~~D 11011~~

4. On a cold evening the temperature outside a house is -4°C and inside the temperature is 12°C . The temperature inside the house is higher than that outside by

- A -8
- B 8
- ~~C 16~~
- D -16

5. The square root of $12\frac{1}{4}$ is

- A $3\frac{1}{4}$
- B $3\frac{3}{4}$
- C $3\frac{1}{3}$
- ~~D $3\frac{1}{2}$~~

6. In ascending order; 40%, $\frac{3}{5}$, 0.75 can be written as

- A 0.75, 40%, $\frac{3}{5}$
- B $\frac{3}{5}$, 0.75, 40%
- ~~C 40%, $\frac{3}{5}$, 0.75~~
- D $\frac{3}{5}$, 40%, 0.75

7. An element in the set $S = \{\frac{2}{3}, -4, 1.5, \sqrt{2}\}$ which is an integer is

- ~~A -4~~
- B $\frac{2}{3}$
- C $\sqrt{2}$
- D 1.5

8. 0.0596 expressed correct to three decimal places is

- A 0.0596
- ~~B 0.060~~
- C 0.059
- D 0.596

9. The number 0.0188×10^{-1} , written in standard form is

- A 1.88×10^4
- B 1.88×10^3
- ~~C 1.88×10^{-3}~~
- D 1.88×10^{-4}

10. Bernard pays for electricity at a rate of 55FCFA per unit. Given that he uses 2 units of electricity per day, his bill, in FCFA, in a month of 30 days will be

- A 2,600
- ~~B 3,300~~
- C 1100
- D 3000

11. A trader sold a dress for 40,000FCFA at a loss of 20%. The cost price of the dress, in FCFA, was

- ~~A 50,000~~
- B 8,000
- C 32,000
- D 60,000

12. Given that $P : Q = 3 : 1$ and $Q : R = 2 : 5$, then the ratio $P : R =$
- A 3 : 5
~~B 6 : 5~~
 C 3 : 10
 D 4 : 5

13. Figure 1 shows the set $Q = \{\text{Chemistry}\}$ and $P = \{\text{Physics}\}$. The number of students who offer Chemistry or Physics is

- A 2
 B 7
 C 9
~~D 16~~

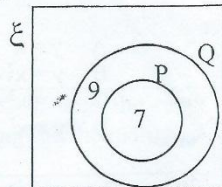


Fig. 1

14. Given that $P \cap Q = \{\}$, then the sets P and Q are said to be
- A Infinite
 B Subsets
~~C Disjoint~~
 D Null sets

15. State the sentence that is a statement
- ~~A He can write~~
 B Sit down
 C The apple tree
 D What time is it?

16. Given the statements:
 p : All Principals are attending a meeting.
 q : John is a Principal.
 then, $p \wedge q$ means
- A John is attending a meeting
 B The meeting is attended by John
 C John is in the meeting
~~D John is a Principal attending a meeting~~

17. Figure 2 shows a relation $P \rightarrow Q$. This type of relation is

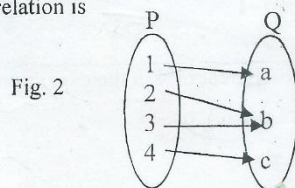


Fig. 2

- A one - one
~~B many - one~~
 C one - many
 D many - many

3

18. Given that $f(x) = x^2 - 5x - 6$, then $f(-3)$ is
- A 0
 B 12
~~C 18~~
 D 30

19. Figure 3 shows that the lines L_1 and L_2 are parallel and L_3 is their transversal. The value of the angle marked θ is

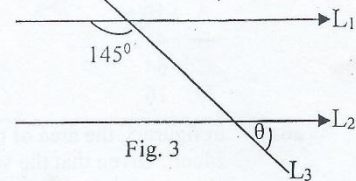


Fig. 3

- ~~A 35°~~
 B 45°
 C 55°
 D 65°

20. The number of vertices for a tetrahedron is
- ~~A 4~~
 B 5
 C 8
 D 12

21. A regular polygon has an interior angle measuring 108° . The name of the regular polygon is a
- A Quadrilateral
 B Heptagon
 C Hexagon
~~D Pentagon~~

22. A quadrilateral that has four equal sides, a rotational and point symmetry is called a
- A Trapezium
 B Rectangle
~~C Rhombus~~
 D Parallelogram

23. In figure 4, PQ is the diameter of the circle of centre, O. RQ is a tangent to the circle at T. Given that the angle TPW is 30° , then the value of angle θ is

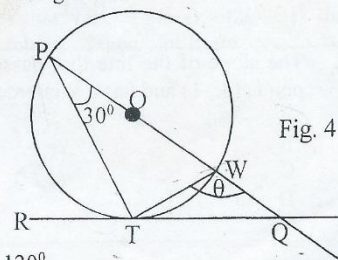


Fig. 4

- A 120°
 B 60°
 C 90°
 D 30°

Turn Over

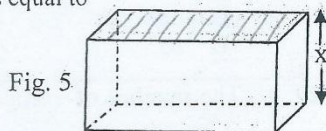
24. The areas of similar triangles are proportional to

A The sizes of their corresponding angles
 B The cubes of their corresponding sides
 C The squares of their corresponding sides
 D The squares of their corresponding angles

25. Given that the perimeter of a square garden is 8m, its area, in m^2 , is

A 10
 B 4
 C 64
 D 16

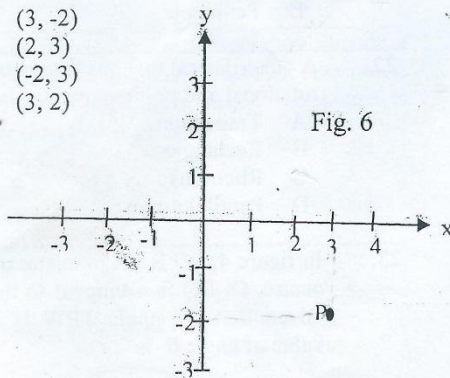
26. In figure 5, the area of the shaded region is $24cm^2$. Given that the volume is $72cm^3$ then x , in cm, is equal to



A 2
 B 8
 C 3
 D 9

27. Figure 6, shows the point P whose coordinates are

A (3, -2)
 B (2, 3)
 C (-2, 3)
 D (3, 2)

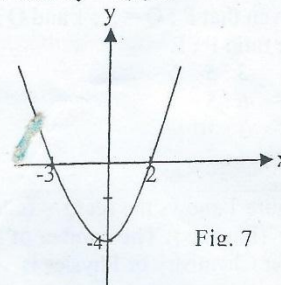


28. The slope of the line that passes through the points (3, -1) and has a y-intercept of 5 is

A -3
 B -2
 C 2
 D 3

4

29. In figure 7, the equation of the curve $y = f(x)$ is



A $y = x^2 + x - 6$
 B $y = x^2 - 7x + 12$
 C $y = x^2 + 6x + 8$
 D $y = x^2 - 2x - 8$

30. The number of terms in the expression $-2x + 6y - 5t + 6$ is

A 3
 B 4
 C 5
 D 6

31. Expanding $(1 + x)(2 - 3x)$, gives

A $2 - x - 3x^2$
 B $2 + x - 3x^2$
 C $2 - 5x - 3x^2$
 D $2 - x + 3x^2$

32. Given that, $p = \frac{t-m}{t+m}$, then writing m in terms of p and t gives

A $\frac{t-pt}{p+1}$
 B $\frac{t-pt}{p-1}$
 C $\frac{t-pt}{2}$
 D $\frac{t+pt}{p-1}$

$$\begin{aligned} p &= \frac{t-m}{t+m} \\ p(t+m) &= t-m \\ t-m &= p(t+m) \\ t-m &= pt+pm \\ t-pt &= pm+m \\ t-pt &= m(p+1) \\ \frac{t-pt}{p+1} &= m \end{aligned}$$

33. The coefficient of x in the expansion

$$\frac{1}{3}(2y-3x+w)$$

A -3
 B 1
 C -1
 D 2

34. Given that $x = 2y - 1$ and $2x = 3y + 2$, then $x =$
- A 7
 - B 4
 - C -4
 - D -7

35. When $f(x) = 3x^2 + kx - 5$ is divided by $(x - 2)$ the remainder is 11. The value of k satisfying this condition is
- A -2
 - B 3
 - C 2
 - D 6
- Handwritten work:*
 $3(2)^2 + k(2) - 5 = 11$
 $12 + 2k - 5 = 11$
 $7 + 2k = 11$
 $2k = 11 - 7$
 $2k = 4$
 $k = 2$

36. Given that $x^2 - 1 \leq 0$, then the range of values of x satisfying the inequality is
- A $]-1, 1[$
 - B $[-1, 1]$
 - C $[-1, 1[$
 - D $] -1, 1]$

37. The value of x when $4^x = 2^{-2}$ is
- A -2
 - B 2
 - C 1
 - D -1
- Handwritten work:*
 $2x = -2$
 $x = -1$

38. Given a sequence 2, 7, 12, 17, ... the n th term of this sequence is
- A $5n + 2$
 - B $2(n + 1) - 2$
 - C $5n + 3$
 - D $5n - 3$

39. Given that T is directly proportional to M and that when $M = 4$, $T = 20$, then when $M = 3$, $T =$
- A 23
 - B 15
 - C 12
 - D 60
- Handwritten work:*
 $4 + 3 = 7$
 $20 + x$

40. Figure 8, shows a network. The number of arcs displayed by this network is

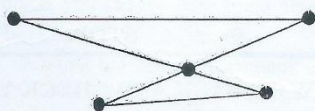


Fig. 8

- A 2
- B 4
- C 5
- D 6

41. In figure 9, the vertical height, in cm, of the cone is

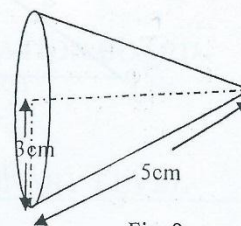


Fig. 9

- A 2
- B 4
- C 8
- D 6

42. In figure 10, the length of PQ is $x + 3$, PR is $x + 1$ and QR is 5. The value of $\cos \theta$ is

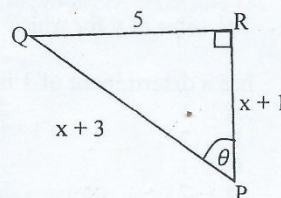


Fig. 10

- A $\frac{5}{x+3}$
- B $\frac{5}{x+1}$
- C $\frac{x+3}{5}$
- D $\frac{x+1}{x+3}$

43. Given that $\vec{OR} = (4\mathbf{i} - \mathbf{j}) - (2\mathbf{i} - 3\mathbf{j})$, then the coordinates of the point R are

- A (2,2)
 - B (7,3)
 - C (-3,7)
 - D (-3,1)
- Handwritten work:*
 $4 - 1 = 3$
 $3 - (-1) = 4$
 $3, 4$

44. In figure 11, R is a point on PQ such that $PR:RQ = 1:1$. Then $\vec{OR}$

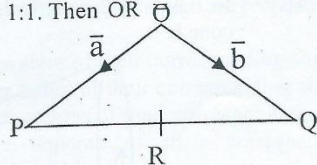


Fig. 11

- A $\frac{1}{2}\vec{a} + \vec{b}$
 B $\vec{a} + \frac{1}{2}\vec{b}$
 C $\frac{1}{2}(\vec{a} - \vec{b})$
 D $\frac{1}{2}(\vec{a} + \vec{b})$

45. The value of y for which the matrix $\begin{pmatrix} y & 3 \\ 1 & 2 \end{pmatrix}$

has a determinant of 1 is

- A 1
 B 2
 C -1
 D -2

46. Given the 2×2 matrix $P = \begin{pmatrix} 2 & 1 \\ 5 & 3 \end{pmatrix}$, the inverse of P is

- A $\begin{pmatrix} 3 & -1 \\ -5 & 2 \end{pmatrix}$
 B $\begin{pmatrix} 2 & -5 \\ -1 & 3 \end{pmatrix}$
 C $\begin{pmatrix} -3 & 5 \\ 1 & 2 \end{pmatrix}$
 D $\begin{pmatrix} -2 & 1 \\ 5 & -3 \end{pmatrix}$

47. The image of the point $(-1, 5)$ when rotated 90° clockwise about the origin is

- A $(5, 1)$
 B $(-5, 1)$
 C $(-1, -5)$
 D $(1, 5)$

6

48. The median of the set of numbers 5, 3, 4, 10, 8, 4, 7, 12 is

- A 6
 B 4
 C 9
 D 12

49. Figure 12 shows a bar chart of a distribution.

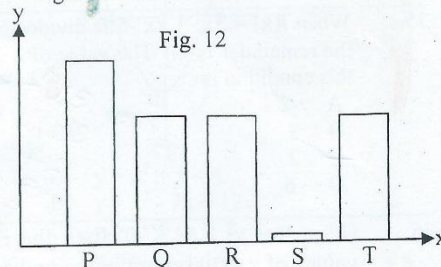


Fig. 12

The mode of this distribution is

- A S
 B Q and R
 C P
 D T

50. In a table tennis competition, the probability of John winning is $\frac{2}{3}$ and that of Peter winning is $\frac{1}{2}$. The probability of John losing and Peter winning is

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

STOP

NOW GO BACK AND CHECK YOUR WORK