

3

2

1. The value of  $\frac{1}{2}$  of  $\frac{1}{3} \div 1\frac{1}{3} - 2$  is

A  $-\frac{15}{8}$   
 B  $-\frac{7}{4}$   
 C  $-\frac{7}{8}$   
 D  $\frac{1}{2}$

2. The number  $101_2$  when doubled gives

A  $202_4$   
 B  $202_2$   
 C  $1010_2$   
 D  $11001_2$

3.  $0.08 \div 3.5$  simplifies to two decimal places as

A 0.022  
 B 0.023  
 C 0.0228  
 D 0.229

4. Given that, 1 dollar is equivalent to 480 FCFA then the equivalence of 1 440 000 FCFA in dollars is

A 30  
 B 300  
 C 3 000  
 D 30 000

5. An article taken out of a deep freezer at  $-10^\circ\text{C}$  and it attains room temperature of  $29^\circ\text{C}$ . The change in the temperature of the article is

A  $-39^\circ\text{C}$   
 B  $19^\circ\text{C}$   
 C  $29^\circ\text{C}$   
 D  $39^\circ\text{C}$

6. A buyam-sellam buys a bag of vegetables at 2 400 francs and retails it at 3 000 frs. Her percentage profit is

A  $11\frac{1}{9}\%$   
 B 20%  
 C 25%  
 D 80%

7. A map is drawn to a scale of 1: 200 000. The actual distance, in km, of the two towns which are 12.5cm apart on the map is

A 250  
 B 25  
 C 2.5  
 D 0.25

8. In a certain school the ratio of boys to girls is 4: 5. Given that there are 180 girls, the number of students in the school is

A 260  
 B 280  
 C 324  
 D 405

0.05701-B

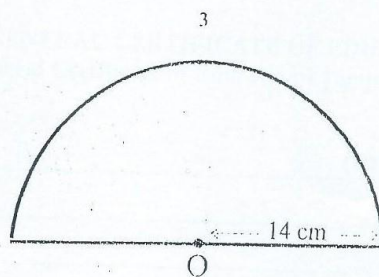


Figure 1

The diagram shows a semicircle of radius 14cm. Taking  $\pi$  as  $\frac{22}{7}$ , then the perimeter of the semicircle is

- A 36
- B 44
- C 58
- D 72

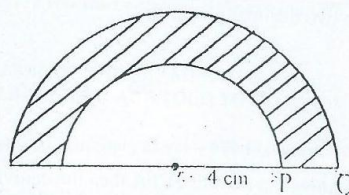


Figure 2

In figure 2, O is the centre of a semi-circular plate of internal radius 4cm. Given that  $PQ = 3$ cm, the area of the shaded portion, in terms of  $\pi$ , is

- A  $\frac{5\pi}{2}$
- B  $6\pi$
- C  $\frac{33\pi}{2}$
- D  $33\pi$

11. A cubical tank having length 30m and square base of area  $25\text{m}^2$  is half full with water. The quantity of water, in  $\text{m}^3$ , in the tank is

- A 250
- B 375
- C 500
- D 750



12.

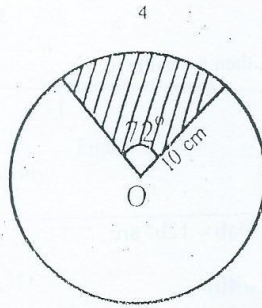


Figure 3

The area, in  $\text{cm}^2$ , of the shaded sector, in terms of  $\pi$ , is

- A  $2\pi$
- B  $4\pi$
- C  $20\pi$
- D  $40\pi$

13. The shaded portion in figure 4 below can be described using set notation as

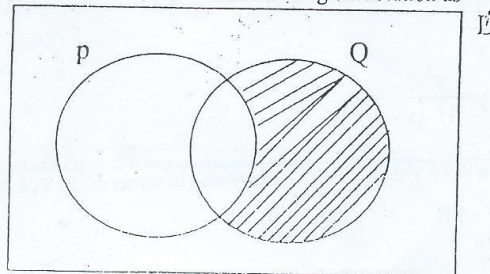


Figure 4

- A  $P \cap Q$
- B  $P \cap Q'$
- C  $Q - P$
- D  $Q - P \cap Q$

14. Given that G represents the set of girls in a class and F represents the set of students who play football, the statement "No girls in the class plays football" can be written in set notation as.

- A  $G \cap F = \phi$
- B  $G' \cap F = \phi$
- C  $G \cap F' = \phi$
- D  $G \cap F \neq \phi$

15. The number of elements in two sets P and Q are shown in the Venn Diagram below.

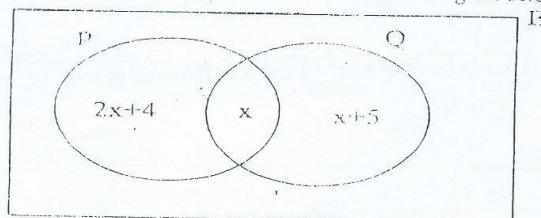


Figure 5

03/570/1/B

Given that  $n(P) = n(Q)$ , then the value of  $x$  is

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

G 16. The factors of  $a^2 - 3b + 4ab - 12b^2$  are

- A  $4b(a - 3b)$
- B  $(a - 3b)(1 - 4b)$
- C  $(a - b)(12b - 3 - 4a)$
- D  $(a - 3b)(1 + 4b)$

G 17. Simplifying the expression  $\frac{x^2}{x^2 - 1} \div \frac{x}{x - 1}$  gives.

- A 1
- B  $\frac{x}{x+1}$
- C  $\frac{x+1}{x}$
- D  $\frac{x^3}{(x^2 - 1)(x - 1)}$

G 18. Given that  $yPV = kRT$  then  $T$  can be expressed in terms of  $P$ ,  $V$ ,  $k$  and  $R$  as =

- A  $PV - kR$
- B  $\frac{PVk}{R}$
- C  $\frac{PVP}{k}$
- D  $\frac{PV}{kR}$

G 19.  $x$  pens and  $y$  pencils cost 150frs, and  $2x$  pens and  $5y$  pencils cost 375frs. The cost of a pen is

- A 125
- B 100
- C 75
- D 25

G 20. One solution of the quadratic equation  $2x^2 + 5x - 3 = 0$  can be

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

G 21. Given that  $(x - 1)$  is a factor of  $x^3 + 2x^2 + kx - 1$  then the value of  $k$  is

- A -4
- B -2
- C -1
- D 2



G 22.

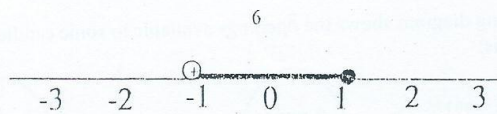


Figure 6

The diagram above represents the inequality

- A  $-1 < x \leq 1$
- B  $-1 \leq x < 1$
- C  $x \leq \pm 1$
- D  $x \leq 1$  and  $x < -1$

G 23.

Given that  $2^{\frac{1}{2}x} = 16$ , the value of  $x$  is

- A 12
- B 8
- C 6
- D 4

G 24.

The sum of the first  $n$  terms of a sequence is given by  $S_n = 3n^2 - n + 5$ . The second term of the sequence is

- A 15
- B 8
- C  $7\frac{1}{2}$
- D 7

G 25.

$P$  varies inversely as the square of  $q$  and  $P = 3$  when  $q = 2$ . The value of  $P$  when  $q = 1$  is.

- A 12
- B 6
- C  $\frac{3}{2}$
- D  $\frac{3}{4}$

G 26.

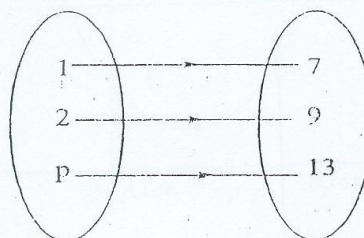


Figure 7

The figure above represents the mapping  $f: \mathbb{R} \rightarrow \mathbb{R}$ ,

$$f: x \mapsto 2x + 5.$$

The value of  $p$  is

- A 31
- B 9
- C 4
- D 3

27. The following diagram shows the openings available to some candidates after their end-of-course examinations:

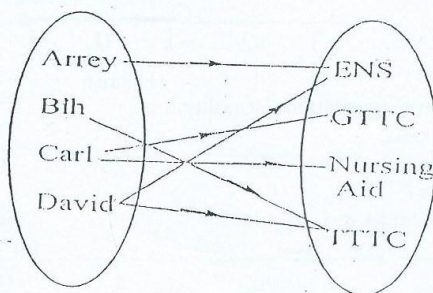


Figure 8

This relation is described as

- A One-to-one  
 B One-to-many  
 C Many-to-one  
 D Many-to-many

28. The function  $f$  is defined as

$$f: x \mapsto \frac{x+6}{2}$$

Then  $f^{-1}(x)$ , where  $f^{-1}$  is the inverse function of  $f$ , is equal to

- A  $\frac{2}{x+6}$   
 B  $\frac{x-6}{2}$   
 C  $2x-6$   
 D  $2y-6$

- 29.

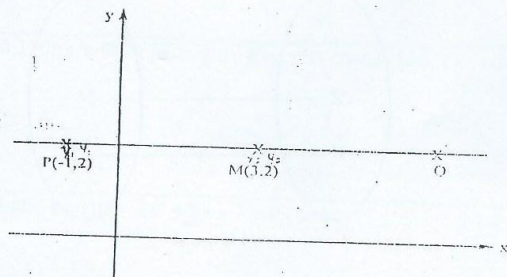


Figure 9

Given that M is the mid-point of PQ, the coordinates of Q are

- A (7, 2)  
 B (2, 2)  
 C (5, 2)  
 D (-5, 2)