

# Karapettai Nadar Boys Hr. Sec. School

## One Word Test No 1

### Standard - X

Time: 20 Minutes

Marks: (15 × 1 = 15)

Answer all the 15 questions. Choose the correct answer from the given four alternatives and write the option code and the corresponding answer.

- 1) If  $A = \{5, 6, 7\}$ ,  $B = \{1, 2, 3, 4, 5\}$  and  $f: A \rightarrow B$  is defined by  $f(x) = x - 2$ , then the range of  $f$  is
  - a)  $\{1, 4, 5\}$
  - b)  $\{1, 2, 3, 4, 5\}$
  - c)  $\{2, 3, 4\}$
  - d)  $\{3, 4, 5\}$
- 2) If the third term of a G.P is 2, then the product of first 5 terms is
  - a)  $5^2$
  - b)  $2^5$
  - c) 10
  - d) 15
- 3) The sequence -3, -3, -3, ... is
  - a) an A.P. only
  - b) a G.P. only
  - c) neither A.P. nor G.P.
  - d) both A.P. and G.P.
- 4) If  $ax^2 + bx + c = 0$  has equal roots, then  $c$  is equal
  - a)  $\frac{b^2}{2a}$
  - b)  $\frac{b^2}{4a}$
  - c)  $-\frac{b^2}{2a}$
  - d)  $-\frac{b^2}{4a}$
- 5) If  $\alpha$  and  $\beta$  are the roots of  $ax^2 + bx + c = 0$ , then one of the quadratic equations whose roots are  $\frac{1}{\alpha}$  and  $\frac{1}{\beta}$ , is
  - a)  $ax^2 + bx + c = 0$
  - b)  $bx^2 + ax + c = 0$
  - c)  $cx^2 + bx + a = 0$
  - d)  $cx^2 + ax + b = 0$
- 6) If  $A = \begin{pmatrix} 1 & -2 & 3 \end{pmatrix}$  and  $B = \begin{pmatrix} -1 \\ 2 \\ -3 \end{pmatrix}$  then  $A + B$ 
  - a)  $\begin{pmatrix} 0 & 0 & 0 \end{pmatrix}$
  - b)  $\begin{pmatrix} 0 \\ 0 \\ 0 \end{pmatrix}$
  - c) -14
  - d) not defined
- 7) The centroid of the triangle with vertices at (-2, -5), (-2, 12) and (10, -1) is
  - a) (6, 6)
  - b) (4, 4)
  - c) (3, 3)
  - d) (2, 2)
- 8) The angle of inclination of a straight line parallel to x-axis is equal to
  - a)  $0^\circ$
  - b)  $60^\circ$
  - c)  $45^\circ$
  - d)  $90^\circ$
- 9) In the figure, the value  $x$  is equal to
 
  - a) 4.2
  - b) 3.2
  - c) 0.8
  - d) 0.4
- 10)  $\triangle ABC$  is a right angled triangle where  $\angle B = 90^\circ$  and  $BD \perp AC$ . If  $BD = 8$  cm,  $AD = 4$  cm, then  $CD$  is
  - a) 24 cm
  - b) 16 cm
  - c) 32 cm
  - d) 8 cm
- 11)  $(1 - \sin^2 \theta) \sec^2 \theta =$ 
  - a) 0
  - b) 1
  - c)  $\tan^2 \theta$
  - d)  $\cos^2 \theta$
- 12) If  $x = a \sec \theta$ ,  $y = b \tan \theta$ , then the value of  $\frac{x^2}{a^2} - \frac{y^2}{b^2} =$ 
  - a) 1
  - b) -1
  - c)  $\tan^2 \theta$
  - d)  $\operatorname{cosec}^2 \theta$

- 13) Base area of a right circular cylinder is  $80 \text{ cm}^2$ . If its height is 5 cm, then the volume is equal to
- a)  $400 \text{ cm}^3$                       b)  $16 \text{ cm}^3$                       c)  $200 \text{ cm}^3$                       d)  $\frac{400}{3} \text{ cm}^3$
- 14) Given  $\sum (x - \bar{x})^2 = 48$ ,  $\bar{x} = 20$  and  $n = 12$ . The coefficient of variation is
- a) 25                                      b) 20                                      c) 30                                      d) 10
- 15) A card is drawn from a pack of 52 cards at random. The probability of getting neither an ace nor a king card is
- a)  $\frac{2}{13}$                                       b)  $\frac{11}{13}$                                       c)  $\frac{4}{13}$                                       d)  $\frac{8}{13}$

# Karapettai Nadar Boys Hr. Sec. School

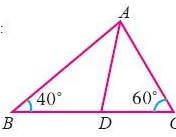
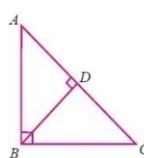
## One Word Test No 2

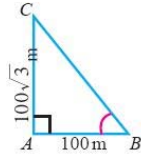
### Standard - X

Time: 20 Minutes

Marks: (15 × 1 = 15)

Answer all the 15 questions. Choose the correct answer from the given four alternatives and write the option code and the corresponding answer.

- 1) If  $n(A) = 20$ ,  $n(B) = 30$  and  $n(A \cup B) = 40$ , then  $n(A \cap B)$  is equal to  
 a) 50                                      b) 10                                      c) 40                                      d) 70
- 2) If  $a, b, c, l, m$  are in A.P, then the value of  $a - 4b + 6c - 4l + m$  is  
 a) 1    b) 2    c) 3    d) 0
- 3) If the sequence  $a_1, a_2, a_3, \dots$  is in A.P., then the sequence  $a_5, a_{10}, a_{15}, \dots$  is  
 a) a G.P.                                      b) an A.P.  
 c) neither A.P. nor G.P.                      d) a constant sequence
- 4) If the system  $6x - 2y = 3$ ,  $kx - y = 2$  has a unique solution, then  
 a)  $k = 3$                                       b)  $k \neq 3$                                       c)  $k = 4$                                       d)  $k \neq 4$
- 5) Let  $b = a + c$ . Then the equation  $ax^2 + bx + c = 0$  has equal roots, if  
 a)  $a = c$                                       b)  $a = -c$                                       c)  $a = 2c$                                       d)  $a = -2c$
- 6) If  $(5 \ x \ 1) \begin{pmatrix} 2 \\ -1 \\ 3 \end{pmatrix} = (20)$ , then the value of  $x$  is  
 a) 7    b) -7    c)  $\frac{1}{7}$     d) 0
- 7) The straight line  $4x + 3y - 12 = 0$  intersects the y-axis at  
 a) (3, 0)                                      b) (0, 4)                                      c) (3, 4)                                      d) (0, -4)
- 8) The equation of the straight line passing through the origin and perpendicular to the straight line  $2x + 3y - 7 = 0$  is  
 a)  $2x + 3y = 0$                               b)  $3x - 2y = 0$                               c)  $y + 5 = 0$                               d)  $y - 5 = 0$
- 9) In figure, if  $\frac{AB}{AC} = \frac{BD}{DC}$ ,  $\angle B = 40^\circ$ , and  $\angle C = 60^\circ$ , then  $\angle BAD =$    
 a)  $30^\circ$                                       b)  $50^\circ$                                       c)  $80^\circ$                                       d)  $40^\circ$
- 10) From the given figure, identify the wrong statement.   
 a)  $\triangle ADB \sim \triangle ABC$                       b)  $\triangle ABD \sim \triangle ABC$                       c)  $\triangle BDC \sim \triangle ABC$                       d)  $\triangle ADB \sim \triangle BDC$
- 11)  $\frac{\sec \theta}{\cot \theta + \tan \theta} =$   
 a)  $\cot \theta$                                       b)  $\tan \theta$                                       c)  $\sin \theta$                                       d)  $-\cot \theta$



- 12) In the adjoining figure  $\angle ABC =$
- a)  $45^\circ$                       b)  $30^\circ$                       c)  $60^\circ$                       d)  $50^\circ$
- 13) Radius and height of a right circular cone and that of a right circular cylinder are respectively, equal. If the volume of the cylinder is  $120 \text{ cm}^3$ , then the volume of the cone is equal to
- a)  $1200 \text{ cm}^3$                       b)  $360 \text{ cm}^3$                       c)  $40 \text{ cm}^3$                       d)  $90 \text{ cm}^3$
- 14) For any collection of  $n$  items,  $(\sum x) - \bar{x} =$
- a)  $n\bar{x}$                       b)  $(n-2)\bar{x}$                       c)  $(n-1)\bar{x}$                       d) 0
- 15) Let  $A$  and  $B$  be any two events and  $S$  be the corresponding sample space. Then  $P(\bar{A} \cap B) =$
- a)  $P(B) - P(A \cap B)$                       b)  $P(A \cap B) - P(B)$                       c)  $P(S)$                       d)  $P[(A \cup B)']$

# Karapettai Nadar Boys Hr. Sec. School

## One Word Test No 3

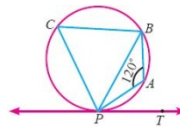
### Standard - X

Time: 20 Minutes

Marks: (15 × 1 = 15)

Answer all the 15 questions. Choose the correct answer from the given four alternatives and write the option code and the corresponding answer.

- 1) Let  $A = \{1, 3, 4, 7, 11\}$ ,  $B = \{-1, 1, 2, 5, 7, 9\}$  and  $f: A \rightarrow B$  be given by  $f = \{(1, -1), (3, 2), (4, 1), (7, 5), (11, 9)\}$ . Then  $f$  is
  - a) one-one
  - b) onto
  - c) bijective
  - d) not a function
- 2) If the  $n^{\text{th}}$  term of a sequence is  $100n + 10$ , then the sequence is
  - a) an A.P.
  - b) a G.P.
  - c) a constant sequence
  - d) neither A.P. nor G.P.
- 3) If the product of the first four consecutive terms of a G.P is 256 and if the common ratio is 4 and the first term is positive, then its 3<sup>rd</sup> term is
  - a) 8
  - b)  $\frac{1}{16}$
  - c)  $\frac{1}{32}$
  - d) 16
- 4) The remainder when  $x^2 - 2x + 7$  is divided by  $x + 4$  is
  - a) 28
  - b) 29
  - c) 30
  - d) 31
- 5) The square root of  $121 x^4 y^8 z^6 (l - m)^2$  is
  - a)  $11 x^2 y^4 z^3 |l - m|$
  - b)  $11 x^4 y^4 |z^3 (l - m)|$
  - c)  $11 x^2 y^4 z^6 |l - m|$
  - d)  $11 x^2 y^4 |z^3 (l - m)|$
- 6) A is of order  $m \times n$  and B is of order  $p \times q$ , addition of A and B is possible only if
  - a)  $m = p$
  - b)  $n = q$
  - c)  $n = p$
  - d)  $m = p, n = q$
- 7) The midpoint of the line joining  $(a, -b)$  and  $(3a, 5b)$  is
  - a)  $(-a, 2b)$
  - b)  $(2a, 4b)$
  - c)  $(2a, 2b)$
  - d)  $(-a, -3b)$
- 8) The equation of a straight line passing through the point  $(2, -7)$  and parallel to x-axis is
  - a)  $x = 2$
  - b)  $x = -7$
  - c)  $y = -7$
  - d)  $y = 2$
- 9) Triangles ABC and DEF are similar. If their areas are  $100\text{cm}^2$  and  $49\text{cm}^2$  respectively and BC is 8.2cm then EF =
  - a) 5.47 cm
  - b) 5.74 cm
  - c) 6.47 cm
  - d) 6.74 cm



- 10) In the figure, if  $\angle PAB = 120^\circ$  then  $\angle BPT =$ 
  - a)  $120^\circ$
  - b)  $30^\circ$
  - c)  $40^\circ$
  - d)  $60^\circ$
- 11)  $\sin(90^\circ - \theta) \cos \theta + \cos(90^\circ - \theta) \sin \theta =$ 
  - a) 1
  - b) 0
  - c) 2
  - d) -1
- 12)  $(1 + \tan^2 \theta) (1 - \sin \theta) (1 + \sin \theta) =$ 
  - a)  $\cos^2 \theta - \sin^2 \theta$
  - b)  $\sin^2 \theta - \cos^2 \theta$
  - c)  $\sin^2 \theta + \cos^2 \theta$
  - d) 0
- 13) The surface areas of two spheres are in the ratio of 9 : 25. Then their volumes are in the ratio
  - a) 81 : 625
  - b) 729 : 15625
  - c) 27 : 75
  - d) 27 : 125
- 14) If  $t$  is the standard deviation of  $x, y, z$ , then the standard deviation of  $x + 5, y + 5, z + 5$  is
  - a)  $\frac{t}{3}$
  - b)  $t + 5$
  - c)  $t$
  - d)  $x y z$

15) The probability that a student will score centum in mathematics is  $\frac{4}{5}$ . The probability that he will not score centum is

a)  $\frac{1}{5}$

b)  $\frac{2}{5}$

c)  $\frac{3}{5}$

d)  $\frac{4}{5}$



# Karapettai Nadar Boys Hr. Sec. School

## One Word Test No 4

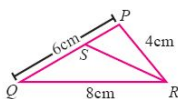
### Standard - X

Time: 20 Minutes

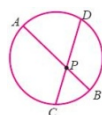
Marks: (15 × 1 = 15)

Answer all the 15 questions. Choose the correct answer from the given four alternatives and write the option code and the corresponding answer.

- If  $A = \{p, q, r, s\}$ ,  $B = \{r, s, t, u\}$ , then  $A \setminus B$  is
  - $\{p, q\}$
  - $\{t, u\}$
  - $\{r, s\}$
  - $\{p, q, r, s\}$
- Which one of the following is not true?
  - A sequence is a real valued function defined on  $\mathbb{N}$ .
  - Every function represents a sequence.
  - A sequence may have infinitely many terms.
  - A sequence may have a finite number of terms.
- If  $a_1, a_2, a_3, \dots$  are in A.P. such that  $\frac{a_4}{a_7} = \frac{3}{2}$ , then the 13<sup>th</sup> term of the A.P. is
  - $\frac{3}{2}$
  - 0
  - $12a_1$
  - $14a_1$
- The GCD of  $(x^3 + 1)$  and  $x^4 - 1$  is
  - $x^3 - 1$
  - $x^3 + 1$
  - $x + 1$
  - $x - 1$
- The square root of  $x^2 + y^2 + z^2 - 2xy + 2yz - 2zx$ 
  - $|x + y - z|$
  - $|x - y + z|$
  - $|x + y + z|$
  - $|x - y - z|$
- If  $\begin{pmatrix} 8 & 4 \\ x & 8 \end{pmatrix} = 4 \begin{pmatrix} 2 & 1 \\ 1 & 2 \end{pmatrix}$  then the value of x is
  - 1
  - 2
  - $\frac{1}{4}$
  - 4
- The slope of the straight line  $7y - 2x = 11$  is equal to
  - $-\frac{7}{2}$
  - $\frac{7}{2}$
  - $\frac{2}{7}$
  - $-\frac{2}{7}$
- The equation of a straight line parallel to y-axis and passing through the point  $(-2, 5)$  is
  - $x - 2 = 0$
  - $x + 2 = 0$
  - $y + 5 = 0$
  - $y - 5 = 0$
- In  $\triangle PQR$ ,  $RS$  is the bisector of  $\angle R$ . If  $PQ = 6\text{cm}$ ,  $QR = 8\text{cm}$ ,  $RP = 4\text{cm}$  then  $PS$  is equal to



- 2 cm
  - 4 cm
  - 3 cm
  - 6 cm
- 10) In the adjoining figure, chords AB and CD intersect at P. If  $AB = 16\text{ cm}$ ,  $PD = 8\text{ cm}$ ,  $PC = 6\text{ cm}$



and  $AP > PB$ , then  $AP =$

- 8 cm
  - 4 cm
  - 12 cm
  - 6 cm
- 11) A man is 28.5 m away from a tower. His eye level above the ground is 1.5 m. The angle of elevation of the tower from his eyes is  $45^\circ$ . Then the height of the tower is
- 30 m
  - 27.5 m
  - 28.5 m
  - 27 m

12)  $\sin^2 \theta + \frac{1}{1 + \tan^2 \theta} =$

- a)  $\operatorname{cosec}^2 \theta + \cot^2 \theta$       b)  $\operatorname{cosec}^2 \theta - \cot^2 \theta$       c)  $\cot^2 \theta - \operatorname{cosec}^2 \theta$       d)  $\sin^2 \theta - \cos^2 \theta$

13) If the total surface area of a solid right circular cylinder is  $200\pi \text{ cm}^2$  and its radius is 5 cm, then the sum of its height and radius is

- a) 20 cm                      b) 25 cm                      c) 30 cm                      d) 15 cm

14) If the variance of a data is 12.25, then the S.D is

- a) 3.5                      b) 3                      c) 2.5                      d) 3.25

15) Probability of getting 3 heads or 3 tails in tossing a coin 3 times is

- a)  $\frac{1}{8}$                       b)  $\frac{1}{4}$                       c)  $\frac{3}{8}$                       d)  $\frac{1}{2}$





- 13) If the radius of a sphere is half of the radius of another sphere, then their respective volumes are in the ratio
- a) 1 : 8                      b) 2 : 1                      c) 1 : 2                      d) 8 : 1
- 14) For any collection of n items,  $\sum(x - \bar{x}) =$
- a)  $\sum x$                       b)  $\bar{x}$                       c)  $n\bar{x}$                       d) 0
- 15) If A and B are two events such that  $P(A) = 0.25$ ,  $P(B) = 0.05$  and  $P(A \cap B) = 0.14$ , then  $p(A \cup B) =$
- a) 0.61                      b) 0.16                      c) 0.14                      d) 0.6



## Answers

### Test No 1

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
d	b	d	b	c	d	d	a	b	b	b	a	a	d	b

### Test No 2

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
b	d	b	b	a	b	b	b	d	b	c	c	c	c	a

### Test No 3

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
a	a	a	d	d	d	c	c	b	d	a	c	d	c	a

### Test No 4

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
a	b	b	c	d	d	c	B	a	c	a	b	a	a	b

### Test No 5

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
b	b	b	a	a	a	b	c	d	c	b	c	a	d	b