

Karapettai Nadar Boys Hr. Sec. School

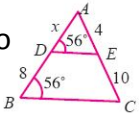
One Word Test No 1

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 α and β 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° b) 60° c) 45° d) 90°
- 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 cm^2 . If its height is 5 cm, then the volume is equal to
- a) 400 cm^3 b) 16 cm^3 c) 200 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) $\frac{8}{13}$

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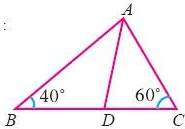
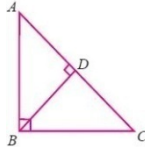
One Word Test No 2

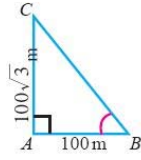
Standard - X

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° b) 50° c) 80° d) 40°
- 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° b) 30° c) 60° d) 50°
- 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 cm^3 , then the volume of the cone is equal to
- a) 1200 cm^3 b) 360 cm^3 c) 40 cm^3 d) 90 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) $P[(A \cup B)']$

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One Word Test No 3

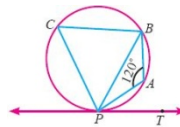
Standard - X

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.

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



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

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) $\frac{4}{5}$



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One Word Test No 4

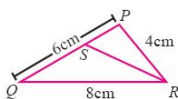
Standard - X

Time: 20 Minutes

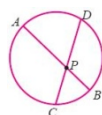
Marks: (15 × 1 = 15)

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 13th 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° . 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