

- I. Four alternatives are given for each of the following questions / incomplete statements. Only one of them is correct or most appropriate. Choose the correct alternative and write the complete answer along with its letter of alphabet.

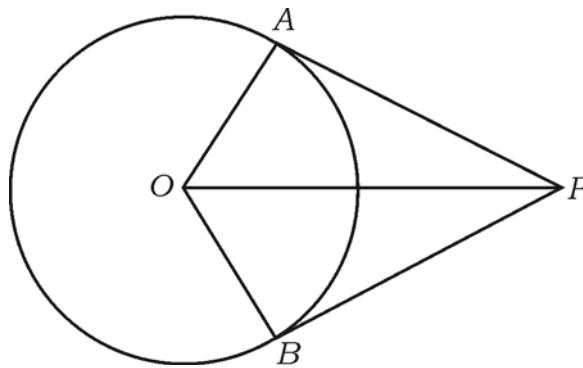
$$8 \times 1 = 8$$

1. If $A = \{4, 8, 12, 16, 20, 24\}$ and $B = \{4, 20, 28\}$ then $A \cap B$ is
 - (A) $\{4, 8, 12, 16, 20, 24, 28\}$
 - (B) $\{4, 20\}$
 - (C) $\{28\}$
 - (D) $\{\}$

2. The sum to infinite terms of a Geometric progression whose first term is a and common ratio r is given by the formula.
 - (A) $S_{\infty} = \frac{a}{1-r}$
 - (B) $S_{\infty} = \frac{1-r}{a}$
 - (C) $S_{\infty} = \frac{a}{1+r}$
 - (D) $S_{\infty} = a(1-r)$

3. If H and L are the HCF and LCM of two numbers A and B respectively then
 - (A) $A \times H = L \times B$
 - (B) $A \times B = L \times H$
 - (C) $A + B = L + H$
 - (D) $A + B = L - H$

4. The degree of the polynomial $P(x) = 2x^3 + 3x^2 - 11x + 6$ is
- (A) 2 (B) 6
(C) 3 (D) 4
5. The standard form of a quadratic equation is
- (A) $ax^2 = 0$
(B) $ax^2 + bx = 0$
(C) $ax^2 + c = 0$
(D) $ax^2 + bx + c = 0$
6. In the given figure, \overline{PA} and \overline{PB} are the tangents to the circle with centre O . If $\angle AOB = 100^\circ$, then $\angle APO$ is



- (A) 50°
(B) 80°
(C) 90°
(D) 40°

7. The value of $\tan^2 60^\circ + 2 \tan^2 45^\circ$ is

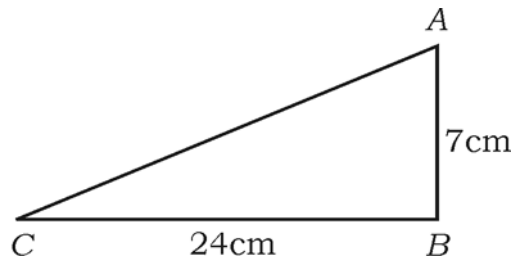
(A) 5

(B) $\sqrt{3} + 1$

(C) 4

(D) $\sqrt{3} + 2$

8. In $\triangle ABC$ right angled at B , $\overline{AB} = 7$ cm, $\overline{BC} = 24$ cm. Then length of \overline{AC} is



(A) 30 cm

(B) 17 cm

(C) 25 cm

(D) 19 cm

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$$8 \times 1 = 8$$

1. If the n -th term of an arithmetic progression $a_n = 24 - 3n$, then its 2nd term is
 - (A) 18
 - (B) 15
 - (C) 0
 - (D) 2
2. The lines represented by $2x + 3y - 9 = 0$ and $4x + 6y - 18 = 0$ are
 - (A) Intersecting lines
 - (B) Perpendicular lines to each other
 - (C) Parallel lines
 - (D) Coincident lines
3. A straight line which passes through two points on a circle is
 - (A) a chord
 - (B) a secant
 - (C) a tangent
 - (D) the radius
4. If the area of a circle is 49π sq.units then its perimeter is
 - (A) 7π units
 - (B) 9π units
 - (C) 14π units
 - (D) 49π units
5. "The product of two consecutive positive integers is 30." This can be expressed algebraically as
 - (A) $x(x + 2) = 30$
 - (B) $x(x - 2) = 30$
 - (C) $x(x - 3) = 30$
 - (D) $x(x + 1) = 30$

6. If a and b are any two positive integers then $\text{HCF} (a, b) \times \text{LCM} (a, b)$ is equal to
- (A) $a + b$ (B) $a - b$
(C) $a \times b$ (D) $a \div b$
7. The value of $\cos 48^\circ - \sin 42^\circ$ is
- (A) 0 (B) $\frac{1}{4}$
(C) $\frac{1}{2}$ (D) 1
8. If $P (A) = 0.05$ then $P (\bar{A})$ is
- (A) 0.59 (B) 0.95
(C) 1 (D) 1.05