

Daily Dose of Aptitude-30-06-2019

1.If $x + y + z = 3$ and $x^2 + y^2 + z^2 = 9$, then the value of $x^3 + y^3 + z^3 - 3xyz$ is?

- (a) 27
- (b) 0
- (c) 90
- (d) 40

2. Ram got married to Sita 10 years ago. Today his age is $\frac{7}{5}$ times of his age at the time of his marriage. Find his age at the time of marriage.

- (a) 12 years
- (b) 35 years
- (c) 25 years
- (d) 45 years

3. A number is 25 more than its two-fifth. What is the number?

- (a) 120
- (b) 125
- (c) $125/3$
- (d) $122/3$

4. An 800 car parking lot is divided into 3 sections. There are 300 lots in section 1 and 150 more in section 2 than in section 3. How many lots are there in section 2?

- (a) 270
- (b) 190
- (c) 325
- (d) 420

5. The sum of three consecutive number is 126. Find the highest number?

- (a) 41
- (b) 42
- (c) 43
- (d) 44

6. The product of two numbers is 8 times the difference of these two numbers. If the sum of these numbers is 12, then the larger number is?

- (a) 6
- (b) 4
- (c) 2
- (d) 8

7. Ram went to a market and bought one copy of a Mathematics book and two pencils for Rs.65. Rahim went to the same market and bought another copy of the same book and ten pencils of the same brand for Rs.69. The price of each pencil was

- (a) Rs. 0.50
- (b) Rs. 1

(c) Rs. 0.75

(d) Rs. 2

8. The length of a rectangular plot is $5\frac{1}{3}$, times that of its breadth. If the area of the plot is 270 square metres, then what is its length?

(a) 120 m

(b) 130 m

(c) 125 m

(d) None of these

9. The population of a town has a constant growth of 4% p.a. If its present population is 62,500, what will be its population after two years?

(a) 67,700

(b) 67,600

(c) 68,600.

(d) 69,600.

10. A sum of Rs. 25000 becomes Rs. 27250 at the end of 3 years when calculated at simple interest. Find the rate of interest.

(a) 6%.

(b) 4%.

(c) 3.5%.

(d) 3%.

Answers and Solutions :

Ans 1: (a)

Sol: We refer to the standard identity:

$$x^3 + y^3 + z^3 - 3xyz = (x + y + z)(x^2 + y^2 + z^2 - xy - yz - zx)$$

Since we have

$$x + y + z = 3$$

$$(x + y + z)^2 = x^2 + y^2 + z^2 + 2(xy + yz + zx) = 9$$

Hence, we have

$$2(xy + yz + zx) = 0$$

$$\Rightarrow xy + yz + zx = 0$$

$$\therefore x^3 + y^3 + z^3 - 3xyz = (3)(9 - 0) = 27$$

Ans 2: (c)

Sol: Let the present age of Ram = X years

10 years ago, his age was = (X - 10) years

According to given condition,

$$\frac{7}{5} \times (X - 10) = X$$

$$7 \times (X - 10) = 5X$$

$$7X - 70 = 5X$$

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$$2X = 70$$

$$X = 35$$

∴ Age of Ram at his marriage is 25 years.

Ans 3: (c)

Let the number be 'x', then,

According to the question,

$$x \times (2/5) + 25 = x$$

$$\Rightarrow x - x \times (2/5) = 25$$

$$\Rightarrow 3x/5 = 25$$

$$\Rightarrow x = (25 \times 5)/3 = 125/3$$

Hence, the required number is 125/3.

Ans 4: (c)

Given, 800 car parking lot is divided into 3 sections.

Also given, 300 lots are in section 1 and 150 more in section 2 than in section 3.

Let the number of lots in section 3 be a.

$$\Rightarrow \text{number of lots in section 2} = a + 150$$

Given that,

$$300 + a + 150 + a = 800$$

$$\Rightarrow 2a = 350$$

$$\Rightarrow a = 175$$

$$\therefore \text{Lots in section 2} = 150 + 175 = 325$$

Ans 5: (c)

Let the three consecutive number be x, x + 1, x + 2

$$\Rightarrow x + (x + 1) + (x + 2) = 126$$

$$\Rightarrow 3x + 3 = 126$$

$$\Rightarrow 3x = 123$$

$$\Rightarrow x = 41$$

$$\therefore \text{Highest number} = x + 2 = 41 + 2 = 43$$

Ans 6:(d)

Sol: Let the numbers be a and b.

Given, sum of numbers is 12.

$$\therefore a + b = 12$$

Also given, product of two numbers is 8 times the difference

$$\therefore ab = 8(a - b)$$

$$\Rightarrow a(12 - a) = 8(a - 12 + a)$$

$$\Rightarrow 12a - a^2 = 16a - 96$$

$$\Rightarrow a^2 + 4a - 96 = 0$$

$$\Rightarrow a = 8, -12$$

Neglect negative value,

$$\therefore a = 8, \therefore b = 12 - a = 4, \text{ Larger number is 8.}$$

Ans 7:(a)

Sol: Let the price of a pencil be p and the price of the textbook be M.

For Ram, the total cost = $M + 2p = 65$

For Rahim, the total cost = $M + 10p = 69$

We subtract the second equation from the first, and see that

$$8p = 4$$

$$\Rightarrow p = 0.5$$

Ans 8: (a)

Let the breadth be x metres. Then, length = $16x/3$ metres

$$x \times 16x/3 = 270$$

$$x^2 = 8100/16$$

$$x = 90/4$$

$$\text{Length} = (16/3) \times (90/4) = 120 \text{ m}$$

Ans 9. (b)

$$\text{Sol: Population after 2 years} = P (1 + 4/100)^2 = 62500 \times (104/100)^2$$

$$= 62500 \times 26/25 \times 26/25 = 100 \times 26 \times 26 = 67600.$$

Hence, the population after two years will be 67,600.

Ans 10:(d)

Solution:

$$\text{Simple interest} = 27250 - 25000 = 2250$$

Time = 3 years.

$$SI = PTR / 100 \rightarrow R = SI * 100 / PT$$

$$R = 2250 * 100 / 25000 * 3 \rightarrow R = 3\%.$$



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