

Algebra (SSC previous year problems)

Q1. If $a+b=10$ and $a \times b=21$, then the value of $(a-b)^2$ is

- a. 15 b. 16 c. 17 d. 18

$a=7, b=3$

$(7-3)^2 = 4^2 = 16$

Normal md

$(a+b)=10, a \times b=21$

$(a+b)^2 = a^2 + 2ab + b^2$

$(a-b)^2 = a^2 - 2ab + b^2$

$(a-b)^2 = a^2 - 2ab + b^2$

$= a^2 - \underline{2ab} + \underline{2ab} - 2ab + b^2$

$\Rightarrow a^2 + 2ab + b^2 - 4ab$

$\Rightarrow \underline{(a+b)^2 - 4ab} \Rightarrow (10)^2 - 4 \times 21$
 $= \underline{100 - 84 = 16}$

but a train

$3+7=10 \quad a+b \quad \checkmark$

$5+5=10$

$2+8=10$

$3 \times 7 = 21 \quad a \times b = 21$

$5 \times 5 = 25$

2. If $m-n=2$, $mn=\underline{15}$, ($m, n > 0$) then the value of $(m^2-n^2)(m^3-n^3)$ is

- a. 1856 b. 1658 c. 1586 d. 1568 ✓

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(m+n) ✓

$$(m^2-n^2)(m^3-n^3)$$

$$(5^2-3^2)(5^3-\underline{3^3})$$

$$= (25-9)(125-\underline{27})$$

$$= 16 \times 98$$

$$= 16 \times (100-2)$$

$$= 1600-32 = \underline{1568} \checkmark$$

$$m-n=2 \checkmark$$

$$5-3=2$$

$$m \times n = 15$$

$$5 \times 3 = 15$$

$$\underline{m=5, n=3} \checkmark$$