

# Arithmetic Progression Worksheet

b)

$$a_n = 59$$

$$2 + (n-1)3$$

$$2 + 3n - 3 = 59$$

$$3n - 1 = 59$$

$$n = \frac{60}{3} = 20$$

$$d = -5 - (-8) \quad -5 + 8 = 3$$

$$-5 + 3 = -2$$

$$-2 + 3 = 1 \text{ (a)}$$

$$a_4 = 2 + (3)3$$

$$2 + 9$$

$$\Rightarrow 11$$

$$\odot 35 = 2 + (n-1)3$$

$$\Rightarrow 35 = 2 + 3n - 3$$

$$\Rightarrow \frac{36}{3} = n$$

$$\Rightarrow 12 = n$$

$$\Rightarrow a_{12} = 36$$

$$12 - 4 = 8$$

~~$$a_8 = 36 - (7)3$$
$$\Rightarrow 2 + 21 =$$
$$\Rightarrow 2$$~~

$$a_8 = 2 + (7)3$$
$$\Rightarrow 2 + 21 = 23$$

Ans

$$5) \quad \begin{aligned} 35 &= (10 + d) + a \\ 41 &= 12d + a \end{aligned}$$

$$\begin{aligned} \cancel{10d + a} &= 35 \\ \cancel{+ 12d + a} &= 41 \\ 2d &= 6 \\ d &= \frac{6}{2} = 3 \text{ Ans} \end{aligned}$$

$$6) \quad \sqrt{8}, \sqrt{18}, \sqrt{32}$$

$$2\sqrt{2}, 3\sqrt{2}, 4\sqrt{2}$$

$$a = 5\sqrt{2}$$

$$7) \quad \begin{aligned} a + 4d &= 5a \\ a + 9d &= 5a \\ 4d &= 5a - a = 4a \\ d &= a \end{aligned}$$

So no positive integer.

$$8) \quad \rightarrow b) 3, 7, 12, 18$$

$$a) \quad \begin{aligned} a &= 3 \\ d &= 2 \\ L &= 39 \\ n &= 20 \end{aligned}$$

$$S_n = 10 [62] \quad \left[ \text{By } S_n = \frac{n}{2} (a_1 + a_n) \right]$$

$$S_n = 620 \text{ Ans}$$

$$S_n = \frac{(a + l) \cdot n}{2}$$

Where  $a = 3$ ,  $n = 20$ ,  $l = 39$   
Where  $S_n = \text{sum of term}$

$$S_{20} = \frac{(1 + 39) \cdot 20}{2}$$

$$S_{20} = (40) \cdot 10$$

$$S_{20} = 400 \text{ AN}.$$

10)  $S_{20} = \frac{(1 + 20) \cdot 20}{2}$

$$S_{20} = 21 \cdot 10 = 210 \text{ (d)}$$