

1. 5, 8, 11, 14, ... find d.

$$8 - 5$$

Answer: $d = 3$

2. Same sequence: next two terms?

$$14 + 3, \text{ then } + 3$$

Answer: 17, 20

3. 20, 16, 12, ... find d.

$$16 - 20$$

Answer: $d = -4$

4. $a_1 = 7$, $d = 5$. Find a_4 .

$$7, 12, 17, 22$$

Answer: 22

5. 2, 9, 16, ... find a_{10} .

$$a_{10} = 2 + 9(7)$$

Answer: 65

6. $a_n = 4 + (n-1)(6)$. Find a_8 .

$$4 + 7(6)$$

Answer: 46

7. Is 7, 14, 28, 56 arithmetic?

Differences: 7, 14, 28 - not constant

Answer: No (it doubles - geometric)

8. Write the formula for 10, 13, 16, ...

$$a_1 = 10, d = 3$$

Answer: $a_n = 10 + (n-1)(3)$

9. An arithmetic sequence has $a_3 = 14$ and $a_7 = 30$. Find d and a_1 . ★ challenge

$$4 \text{ steps from } a_3 \text{ to } a_7: 16/4 = 4$$

$$a_1 = 14 - 2(4)$$

Answer: $d = 4$, $a_1 = 6$

10. Theater rows: row 1 has 18 seats, each row adds 4. How many seats in row 12, and is a 62-seat row possible?

$$a_{12} = 18 + 11(4) = 62$$

$$62 = 18 + (n-1)4 - n = 12$$

Answer: 62 seats; yes - row 12 exactly