

For #'s 1 and 2, write the next three terms of the arithmetic sequence.

1) First term: 3

Common difference: 11

3, 14, 25, 36

2) First term: 15

Common difference: -6

15, 9, 3, -3

For #'s 3 - 5, find the common difference of the arithmetic sequence.

Subtract the first term from the second term to find the common difference!

3) -15, -10, -5, 0, ...

$$-10 - (-15) = 5$$

Check that the pattern is **+5**

$$d = 5$$

4) 240, 210, 180, 150, ...

$$180 - 210 = -30$$

Check that the pattern is **-30**

$$d = -30$$

5) $2, 2\frac{1}{4}, 2\frac{1}{2}, 2\frac{3}{4}, \dots$

$$2\frac{1}{2} - 2 = \frac{1}{2}$$

Check that the pattern is **$\frac{1}{2}$**

$$d = \frac{1}{2}$$

For #'s 6 - 7, write an equation for the n th term of the arithmetic sequence.

Using your equation, find a_{10} .

General Formula: $a_n = a_1 + d(n - 1)$

6) -3, -1, 1, 3, ...

$$a_1 = -3 \quad d = 2$$

$$\text{Equation: } a_n = -3 + 2(n - 1)$$

$$a_{10} = -3 + 2(10 - 1)$$

$$a_{10} = -3 + 2(9)$$

$$a_{10} = -3 + 18$$

$$a_{10} = 15$$

The 10th term in the sequence is 15

7) 2, -3, -8, -13, ...

$$a_1 = 2 \quad d = -5$$

$$\text{Equation: } a_n = 2 - 5(n - 1)$$

$$a_{10} = 2 - 5(10 - 1)$$

$$a_{10} = 2 - 5(9)$$

$$a_{10} = 2 - 45$$

$$a_{10} = -43$$

The 10th term in the sequence is -43