

Bellwork Alg 2 Wednesday, August 28, 2019

Find the 10th term in each sequence.

1. $11, 17, 23, 29, \dots$

2. $2, 6, 18, 54, \dots$

3. A line passes through these three points: $(-1, -4)$ $(1, 2)$ $(2, 5)$
Write the equation of this line in Slope-Intercept Form ($y = mx + b$).

ANSWERS

Find the 10th term in each sequence.

1. 11, 17, 23, 29, ...
 $\begin{array}{cccc} & \vee & \vee & \vee \\ & +6 & +6 & +6 \end{array}$

formula for
any term (n^{th} term)

$$t_n = 11 + 6(n-1)$$

$n = \text{term \#}$

or

$$t_n = 6n + 5$$

$$t_{10} = 6(10) + 5 \quad \text{or} \quad 11 + 6(10-1)$$

$$t_{10} = 65$$

2. 2, 6, 18, 54, ...
 $\begin{array}{ccc} & \wedge & \\ & \times 3 & \\ \vee & & \vee \\ \times 3 & & \times 3 \end{array}$

formula for
any term (n^{th} term)

$$t_n = 2 \cdot 3^{n-1}$$

$$t_{10} = 2 \cdot 3^{10-1}$$

$$= 2 \cdot 3^9$$

$$t_{10} = 39,366$$

3. A line passes through these three points: $(-1, -4)$ $(1, 2)$ $(2, 5)$
 Write the equation of this line in Slope-Intercept Form ($y = mx + b$).

* find slope using 2 points:

$$(-1, -4) \quad (1, 2) \Rightarrow m = \frac{2 - (-4)}{1 - (-1)} = \frac{6}{2} = 3$$

Find y-int using the slope and one of
the points: $m = 3$ $(1, 2)$

$$\begin{aligned} y &= mx + b \\ 2 &= 3x + b \\ 2 &= 3(1) + b \\ 2 &= 3 + b \\ -3 & \quad -3 \end{aligned}$$

$$-1 = b$$

$$y = 3x - 1$$

Here is
one way to
do this
problem.
There are
other
methods