Bellwork Alg 2 Monday, September 16, 2019

1. There is an arithmetic sequence whose 3rd term is 25 and 6th term is 43. Write the explicit formula for this sequence.

2. There is a geometric sequence whose 2nd term is 18 and whose 4th term is 162. Write the recursive formula for this sequence.

3. After graduating college you take a job with a starting salary of \$42,000. Each year you will get a 2% raise. This situation creates a geometric sequence.

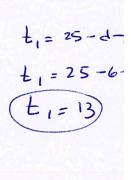
The explicit formula that models this situation is: $t_n = 42000(1.02)^{n-1}$ where $n \ge 1$

a. How much will your salary be in year 10?

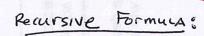
b. How much total money will you have earned in your first ten years?

Monday, September 16, 2019 | Answers Bellwork Alg 2

1. There is an arithmetic sequence whose 3rd term is 25 and 6th term is 43. Write the explicit formula for this sequence. $\frac{1}{t_1}, \frac{1}{t_2}, \frac{1}{t_3}, \frac{1}{t_4}, \frac{1}{t_5}, \frac{1}{t_6}$



2. There is a geometric sequence whose 2nd term is 18 and whose 4th term is 162. Write the recursive formula for this sequence.



$$\begin{array}{c}
t_{1} = b \\
t_{1} = b \\
t_{1} = b \text{ and } r = 3
\end{array}$$

$$\begin{array}{c}
t_{1} = b \\
t_{1} = b \text{ and } r = -3
\end{array}$$

$$\begin{array}{c}
t_{1} = b \\
t_{2} = b \\
t_{3} = -3
\end{array}$$

$$\begin{array}{c}
t_{3} = -3 \\
t_{4} = -3
\end{array}$$

$$\begin{array}{c}
t_{4} = -3 \\
t_{5} = -3
\end{array}$$

$$\begin{array}{c}
t_{7} = t_{3} \\
t_{7} = t_{3}
\end{array}$$

$$\frac{18 \text{ r}^2 = 162}{18}$$

3. After graduating college you take a job with a starting salary of \$42,000. Each year you will get a 2% raise. This situation creates a geometric sequence.

The explicit formula that models this situation is: $t_n = 42000(1.02)^{n-1}$ where $n \ge 1$

b. How much total money will you have earned in your first ten years?

$$n = 10$$

 $t_1 = 42,000$
 $r = 1.02$

$$S_{10} = \frac{1 - r^{h}}{1 - r} = 42,000 \left(\frac{1 - 1.02^{10}}{1 - 1.02}\right)$$

$$S_{10} = \frac{1}{459,868.28}$$