

Name: _____ Period: _____ Date: _____

Geometric Sequence Exit Quiz

Solve the following problem involving geometric sequences:

1. Find the 10th term of the geometric sequence with $a=7$ and $r=2$
2. Find the first term of a geometric sequence with a common ratio of 2 and a 10th term of 384
3. Find the sum of the first seven terms of the geometric sequence 3, 6, 9.....
4. Find the sum of an infinite geometric sequence with first term of 64 and common ratio of $\frac{1}{2}$.
5. Ben started saving money every day, \$2 in the first day, \$4 in the second day, \$8 in the third day, etc. what will be the sum of the money that he saved in seven days?

Geometric Sequence Exit Quiz

ANSWERS

1. Find the 10th term of the geometric sequence with $a=7$ and $r=2$

Answer:

$$a_{10} = (7)(2)^{10-1} = 3584$$

2. Find the first term of a geometric sequence with a common ratio of 2 and a 10th term of 384

Answer:

$$384 = a(2)^{10-1}$$

$$384 = 512a$$

$$a = 0.75 \text{ or } \frac{3}{4}$$

3. Find the sum of the first seven terms of the geometric sequence 3, 6, 9.....

Given:

$$a = 3; r = 2; n = 7$$

Answer:

$$S = (3) \frac{(1 - (2)^7)}{1 - 2} = (3)(127) = 381$$

4. Find the sum of an infinite geometric sequence with first term of 64 and common ratio of $\frac{1}{2}$.

Answer:

$$S = \frac{64}{1 - \frac{1}{2}} = 2(64) = 128$$

5. Ben started saving money every day, \$2 in the first day, \$4 in the second day, \$8 in the third day, etc. what will be the sum of the money that he saved in seven days?

Given:

$$a = 2, r = 2; n = 7$$

Answer:

$$S = (2) \frac{(1 - (2)^7)}{1 - 2} = (2)(127) = \$254$$