Kuta Software - Infinite Algebra 2 Name_____

## Geometric Sequences

Date_____ Period____

**Determine if the sequence is geometric. If it is, find the common ratio.**

1) $-1,\ 6,\ -36,\ 216, \ldots$

2) $-1,\ 1,\ 4,\ 8, \ldots$

3) $4,\ 16,\ 36,\ 64, \ldots$

4) $-3,\ -15,\ -75,\ -375, \ldots$

5) $-2,\ -4,\ -8,\ -16, \ldots$

6) $1,\ -5,\ 25,\ -125, \ldots$

**Given the explicit formula for a geometric sequence find the first five terms and the 8th term.**

7) $a_n = 3^{n-1}$

8) $a_n = 2 \cdot \left(\frac{1}{4}\right)^{n-1}$

9) $a_n = -2.5 \cdot 4^{n-1}$

10) $a_n = -4 \cdot 3^{n-1}$

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## Finite Geometric Series

Date_____ Period____

**Evaluate the related series of each sequence.**

1) $2,\ 12,\ 72,\ 432$

2) $-1,\ 5,\ -25,\ 125$

3) $-2,\ 6,\ -18,\ 54,\ -162$

4) $-2,\ -12,\ -72,\ -432,\ -2592$

**Find the inverse of each function.**

9) $h(x) = \sqrt[3]{x} - 3$

10) $g(x) = \frac{1}{x} - 2$

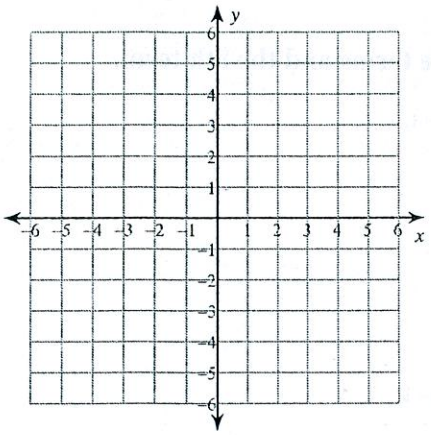
State the:
- end behavior
- y-int
- x-int
- intervals increase/decrease
- Domain & Range (or try to)

11) $h(x) = 2x^3 + 3$

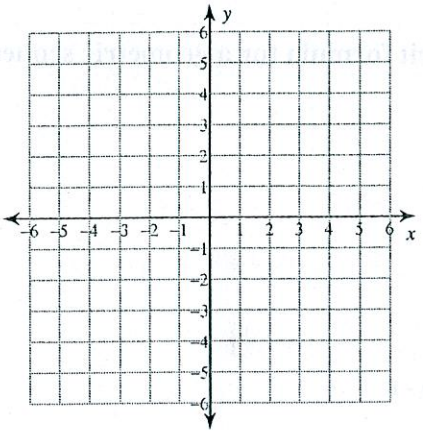
12) $g(x) = -4x + 1$

**Find the inverse of each function. Then graph the function and its inverse.** Also

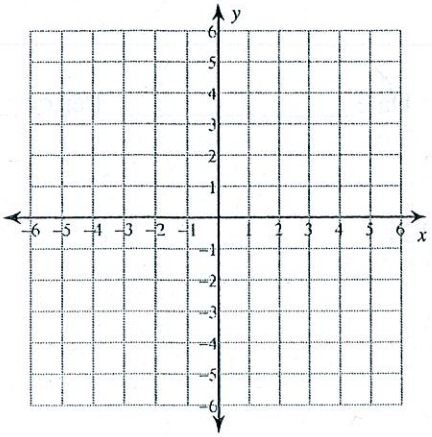
17) $f(x) = -1 - \frac{1}{5}x$



18) $g(x) = \frac{1}{x-1}$



19) $f(x) = -2x^3 + 1$



20) $g(x) = \frac{-x-5}{3}$