

Module 3 Review:

Name: _____

Period: _____

Determine if the sequence is arithmetic or geometric, and find the common difference or multiplier.

1. 25, 28, 31, 34,

2. 1.5, -3, 6, -12,

3. -7, -9, -11, -13,

4. 125, 25, 5, 1,

Given the explicit formula for an arithmetic or geometric sequence, find the first three terms and the term named in the problem.

5. $a_n = -11 + 7(n - 1)$ First 3 terms: _____
 $a_{21} =$ _____

6. $a_n = 32 - 3(n - 1)$ First 3 terms: _____
 $a_{14} =$ _____

7. $a_n = 3(3)^{n-1}$ First 3 terms: _____
 $a_{21} =$ _____

8. $a_n = 210\left(\frac{1}{4}\right)^{n-1}$ First 3 terms: _____
 $a_{14} =$ _____

Given the first term and the common difference for the arithmetic sequence, find the first three terms, and give the explicit formula.

9. $a_1 = 14, d = -3$
First 3 terms: _____

10. $a_1 = -7, d = 12$
First 3 terms: _____

Explicit Formula: _____

Explicit Formula: _____

Given the first term and the common ratio/multiplier for the geometric sequence, find the first three terms, and give the explicit formula.

11. $a_1 = 6, r = -4$
First 3 terms: _____

12. $a_1 = 4, r = 3$
First 3 terms: _____

Explicit Formula: _____

Explicit Formula: _____

Evaluate the following exponential functions:

13. $f(x) = 2^x$ for $f(9)$

14. $f(x) = 2(4)^x$ for $f(6)$

15. $f(x) = 3000 \cdot \left(\frac{1}{5}\right)^x$ for $f(5)$

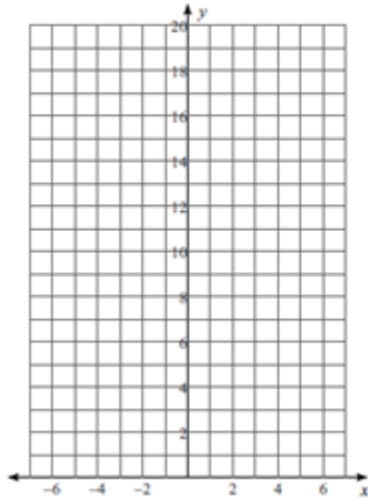
16. $f(x) = 2(.5)^x$ for $f(6)$

17. $f(x) = 2^x + 8$ for $f(4)$

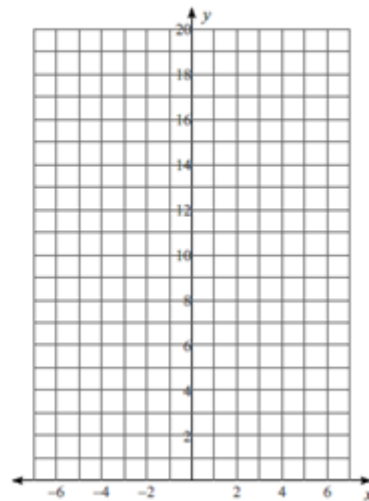
18. $f(x) = 4^x - 25$ for $f(7)$

Graph the following exponential functions using a table:

11) $y = \frac{1}{4} \cdot 4^x$



12) $y = 2 \cdot 1.4^x$



Worksheet - Piecewise Functions

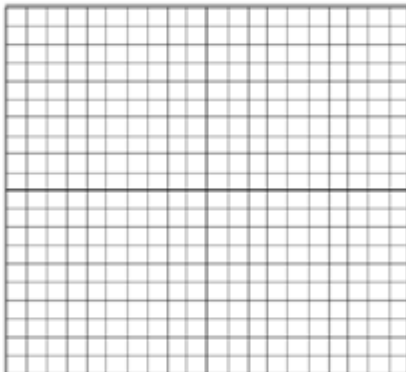
Evaluate the following for $f(x) = \begin{cases} 3x - 5, & x > 4 \\ x^2, & x \leq 4 \end{cases}$:

1. $f(7)$

2. $f(4)$

3. $f(-3)$

9. $h(x) = \begin{cases} -3x + 2, & x \leq 2 \\ \frac{1}{2}x - 4, & x > 2 \end{cases}$



10. $h(x) = \begin{cases} x^2 - 4, & x < 3 \\ \frac{2}{3}x - 5, & x \geq 3 \end{cases}$

