

13. 20, 60, 180, 540, ...

$r=3$

14. 4, 8, 12, 16, ...

15. 5, 2.5, 1.25, 0.625, ...

$r = \frac{1}{2}$

13. Geometric, $r=3$

Explicit $a_n = 20(3)^{n-1}$

Recursive $a_1 = 20, a_n = a_{n-1}(3)$

14. Arithmetic

Explicit X

Recursive X

15. Geometric

Explicit $a_n = 5(\frac{1}{2})^{n-1}$

Recursive $a_1 = 5, a_n = a_{n-1}(\frac{1}{2})$

In the following problems, combine the given functions and simplify.

$f(x) = 9x - 3$

$g(x) = 3x$

15. $(g-f)(x)$

16. $(f \circ g)(x)$

17. $(f+g)(x)$

$3x - (9x - 3)$
 $= -6x + 3$

$(9x - 3) \circ 3x$
 $= 27x^2 - 9x$

$9x - 3 + 3x$
 $= 12x - 3$

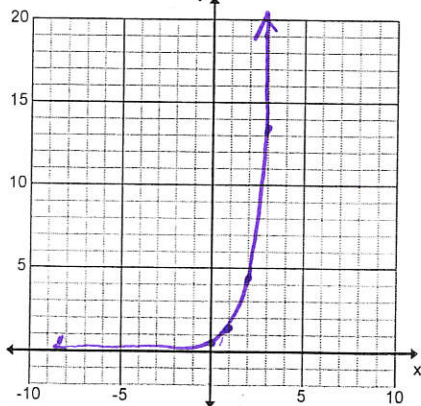
16. $-6x + 3$

17. $27x^2 - 9x$

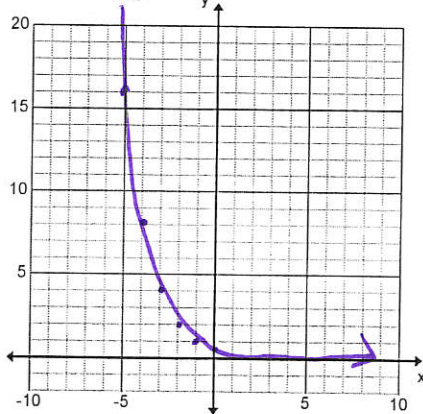
18. $12x - 3$

Graph each function.

19. $f(x) = \frac{1}{2} \cdot 3^x$



20. $y = 0.5 \left(\frac{1}{2}\right)^x$



21. Reasoning: Which of the following exponential decay equations will decrease below 25 first? Explain.

$y_1 = 85(0.32)^x$

$y_2 = 42(0.8)^x$

| | |
|---|-------|
| 0 | 85 |
| 1 | 27.2 |
| 2 | 8.704 |

| | |
|---|-------|
| 0 | 42 |
| 1 | 33.6 |
| 2 | 26.88 |
| 3 | 21.5 |

20. Circle one: y_1 or y_2

Explain: y_1 goes below 25 at $x=2$
 y_2 goes below 25 at $x=3$