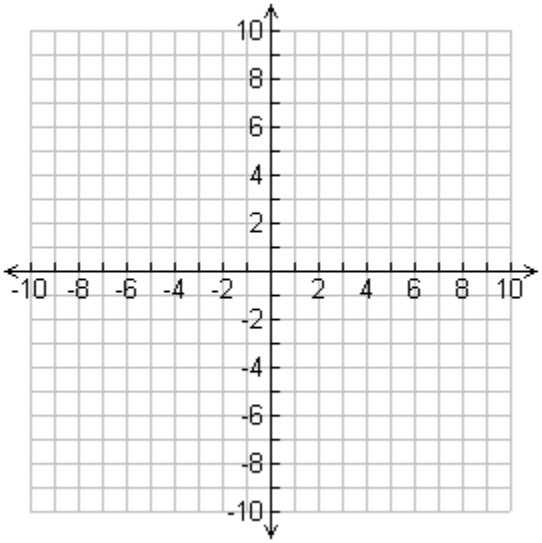
Name_____ Block _____ Date_____

Review: Unit #2→ Lesson 5 – 7

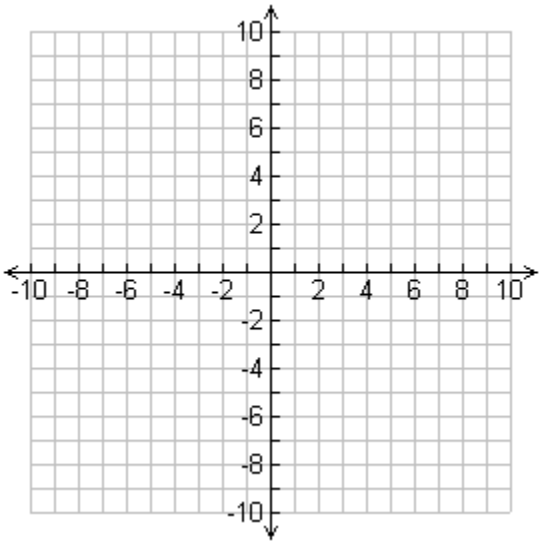
1) What is the x-intercept of the following graph?



2) What is the intercepts of the graph $f(x) = \frac{2}{5}x - 5$?

x-intercept = _____ y-intercept = _____

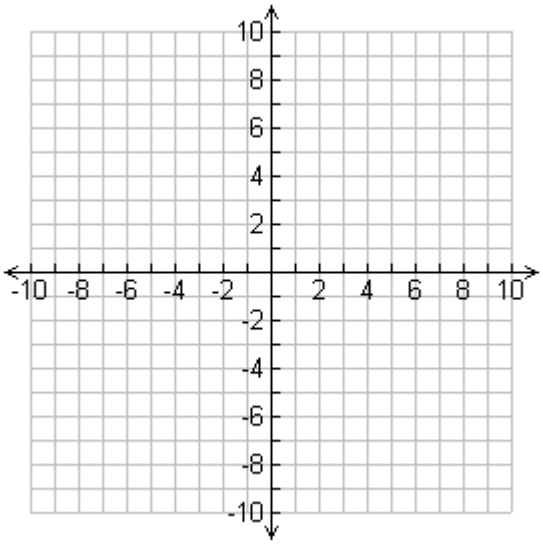
3) What is the y-intercept of the graph below?



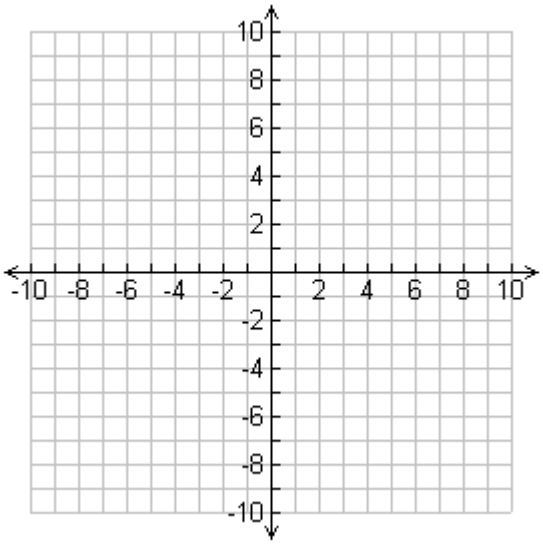
4) What is the y-intercept of the graph $y = 4(¼)^x – 5$?

y-intercept = _____

5) What is the y-intercept of the curve below?



6) What is the best description of the end behavior of the graph below?



- horizontal asymptote of _____

7) What is the best description of the end behavior of the graph of

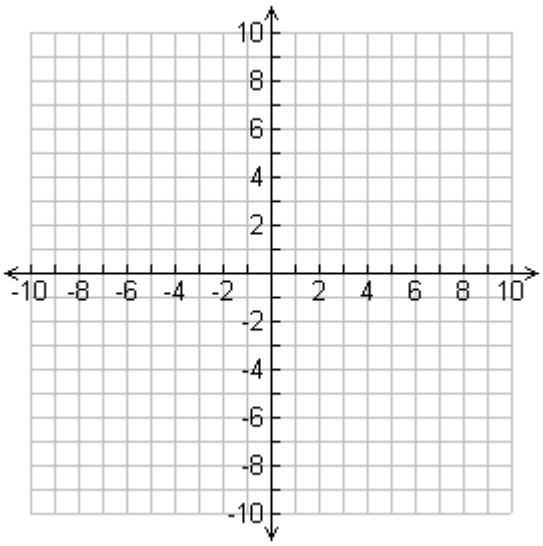
$y = \frac{1}{5}(2)^{x} + 3$?

- a horizontal of asymptote of _____

8) If $g(x) = 4x - 6$ and the domain of g is {3, 5, 7}, what is the range of $g(x)$?

9) If $b_n = b_{n-1} + 7$ and $b_5 = 15$, what is b_8?

10) Given the graph of $f(x)$ below, what is $f(3)$?



11) What is the rate of change for the function $f(x) = 7(3)^{x/5}$ over the interval [10, 20]?

12) Solve the equation $9x + 3y = 27$ for y.

13) **Write an equation to model the scenario:**

It costs \$90 to buy an air conditioner and about \$0.50 **per** minute to run it.

What is the total cost of using an air conditioner? ($y = mx + b$)

14) **Choose the equation that models the scenario:**

An investment of \$800 earns 4.4% interest **compounded quarterly**.

a) $y = 800(1 + 0.044)^{x}$ c) $y = 800(1 + 0.011)^{x}$

b) $y = 800(1 + 0.011)^{4x}$ d) $y = 800(1+ 0.044)^{4x}$

15) Given the inequality $y > -2x + 5$, which is NOT a solution?

a) (4, 3) b)(-3, 0) c) (0, 6) d) (5, 1)

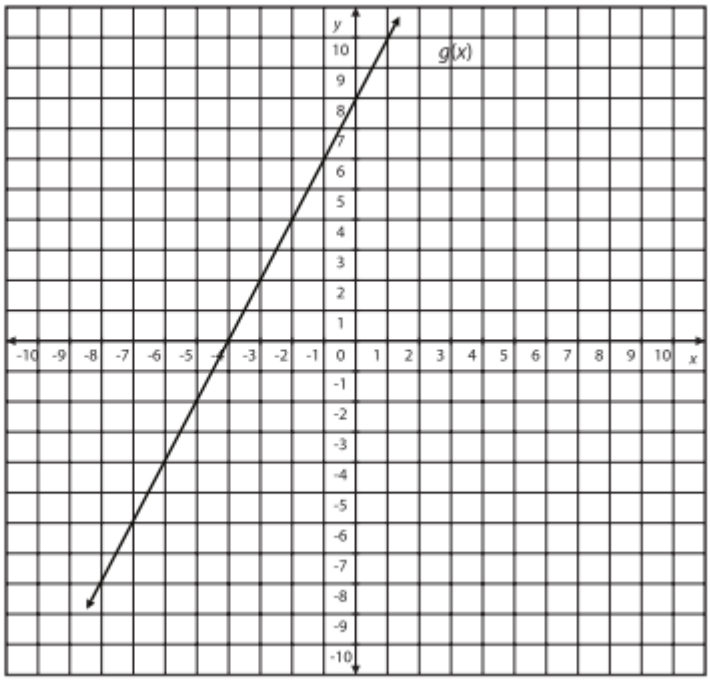
16) An online company is advertising a subscription for downloads of music. The monthly fee is \$7.50, plus \$1.99 for each song downloaded. You can afford to **no more than** \$20.00 each month for downloads. Which inequality represents this scenario?

a) $7.50 + 1.99x > 20$ b) $7.50 + 1.99x < 20$ c) $7.50 + 1.99x \geq 20$ d) $7.50 + 1.99x \leq 20$

17) Which function has the greater rate of change? Which function has a greater y-intercept?

Function A **Function B**

x	$f(x)$
–2	1
0	7
2	13
4	19



18) Which function has the greater rate of change? Which function has a greater y-intercept?

Function A **Function B**

$$f(x)=\frac{2}{3}x-6$$

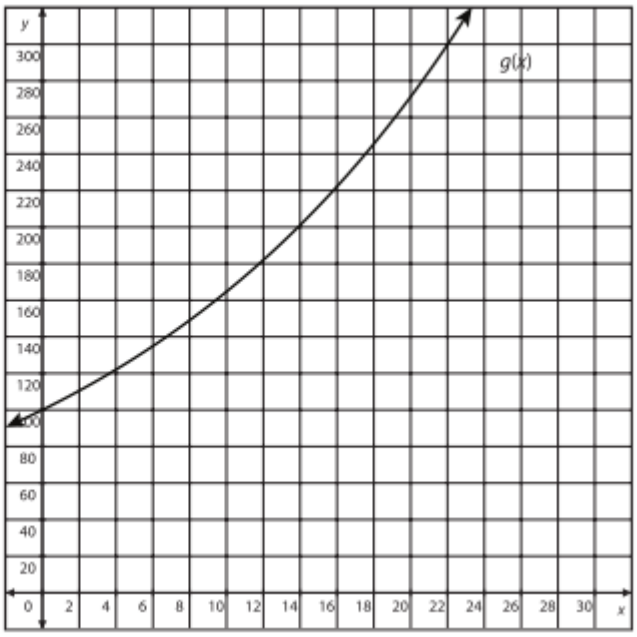
x	$g(x)$
–4	10
0	7
4	4
8	1

19) Which function has the greater rate of change over the interval [0, 12]? Which has a greater y-intercept?

Function A

$$f(x)=200\left(1+\frac{0.05}{12}\right)^{12x}$$

Function B



20) Which function has a greater rate of change? Which function has a greater y-intercept?

Function A

$f(x) = \frac{2}{5}x - 3$

Function B

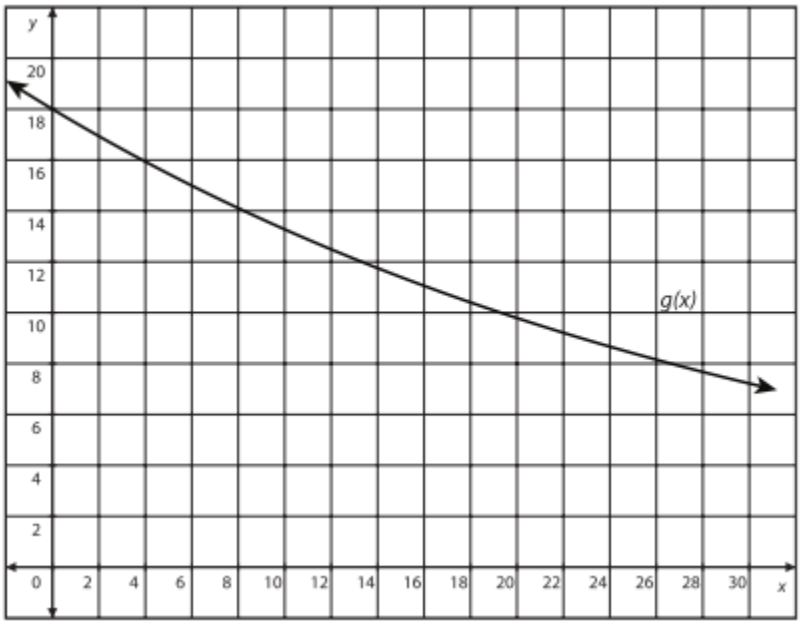
x	g(x)
-4	-29
-2	-17
0	-5
2	7
4	19

21) Which function has the greater rate of change over the interval [0, 2]? Which has a greater y-intercept?

Function A

x	$f(x)$
−1	18.95
0	18
1	17.1
2	16.25

Function B



Multiple Choice

The value of a house generally increases over time. Bailey buys a house for $200,000. After 1 year, the house is worth $220,000. After 2 years, the house is worth $240,000. After 3 years, the house is worth $260,000. Which function describes the relationship between the year and the house value?

a. $f(x) = 20{,}000x$

b. $f(x) = 20{,}000x + 200{,}000$

c. $f(x)=200{,}000\bullet(1.10)^x$

d. $f(x)=220{,}000\bullet(1.10)^x$

The population of a small town is 500 people. Based on growth of the population in past years, it is estimated that after 1 year the population will be 600 people. Similarly, it is estimated that after 2 and 3 years, the population will be 720 and 864 people, respectively. Which function describes the relationship between year and town population?

a. $f(x)=500\bullet(1.2)^x$

b. $f(x)=500\bullet(1.2)^{x-1}$

c. $f(x)=100x+500$

d. $f(x)=500\bullet(0.2)^x$

Which explicit function represents the pattern in the table below?

x	$f(x)$
0	32
1	21
2	10
3	−1
4	−12

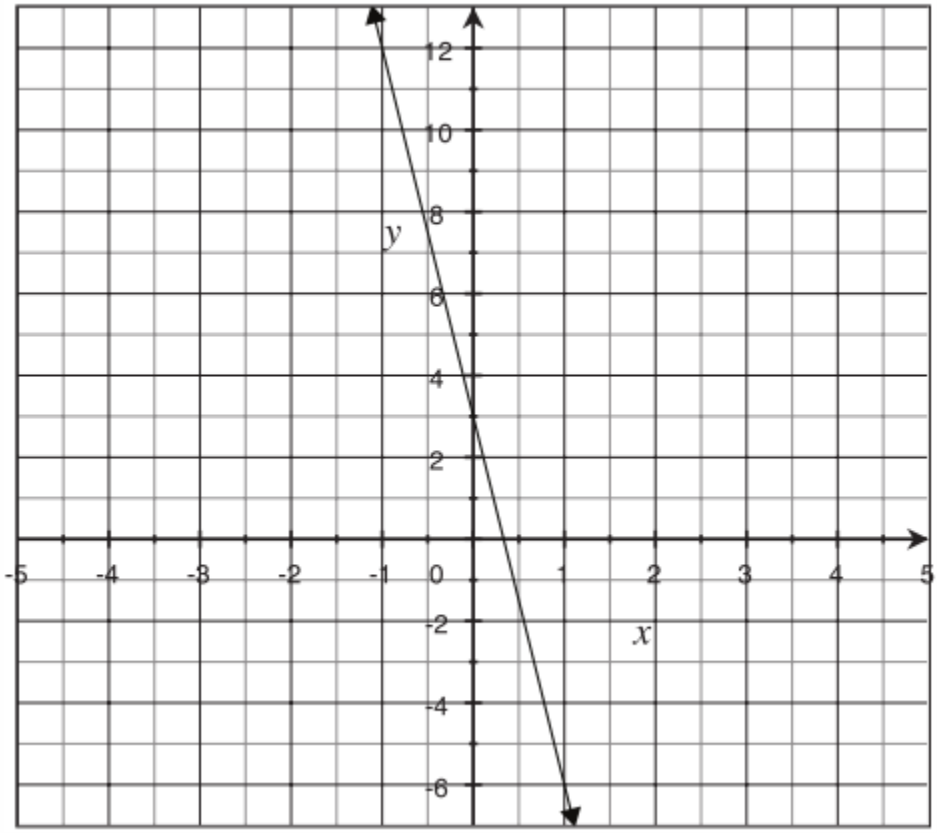
a. $f(x) = 11x + 32$

b. $f(x) = 11x$

c. $f(x) = -11x + 32$

d. $f(x) = 32 \bullet 11^x$

Which function represents the relationship between x and y shown in the graph below?



a. $f(x) = -9x + 3$

b. $f(x) = 9x - 3$

c. $f(x) = (-9)^x$

d. $f(x) = -9x - 3$

Which explicit equation represents the pattern in the table below?

x	$f(x)$
1	–5
2	–35
3	–245
4	–1715

a. $f(x)=(-5)^{x-1}$

b. $f(x)=-7\bullet(5)^{x-1}$

c. $f(x)=(5)\bullet(-7)^{x-1}$

d. $f(x)=(-5)\bullet 7^{x-1}$