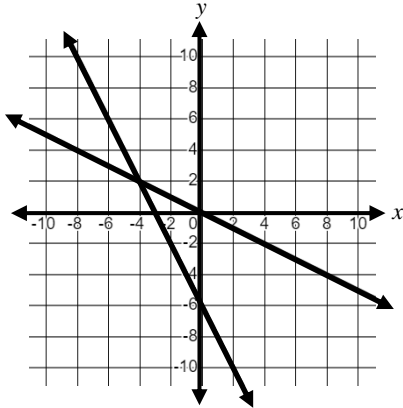


Algebra 2 Readiness: Winter Progress

Questions 1-3: Solve systems of equations.

1. $y = -\frac{1}{2}x$ and $y = -2x - 6$



Find the x -coordinate of the solution: _____

2. $-1x + y = 8$ and $y = 3x$

Find the y -coordinate of the solution: _____

3. $-x + 3y = 10$ and $x + 4y = 11$

Find the x -coordinate of the solution: _____



Algebra 2 Readiness: Winter Progress

(Continued)

Questions 4-6: Factor quadratic expressions and reveal the zeros of a function.

4. The area model below represents the expression $x^2 + 7x + 10$.

What are the two factors of the expression?

$+x^2$	$+x$	$+x$	$+x$	$+x$	$+x$
$+x$	$+1$	$+1$	$+1$	$+1$	$+1$
$+x$	$+1$	$+1$	$+1$	$+1$	$+1$

Factors: _____ and _____

5. Factor the expression.

$$x^2 + 4x - 12$$

Factors: _____ and _____

6. Find the zeros of the function.

$$f(x) = x^2 + 10x + 16$$

Zeros: _____ and _____

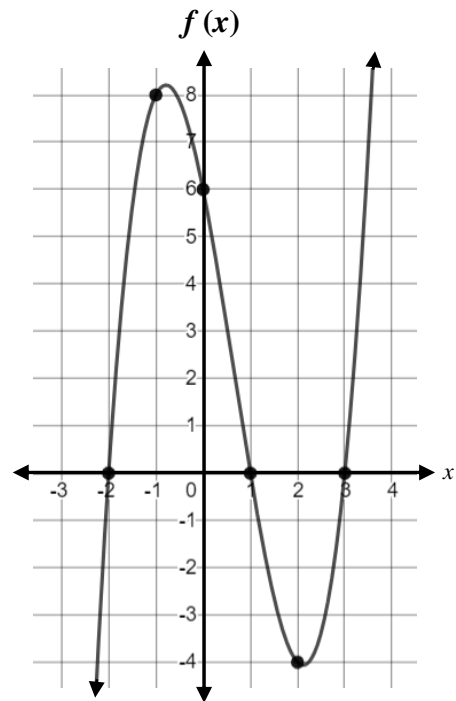


Algebra 2 Readiness: Winter Progress

(Continued)

Questions 7-9: Evaluate the function.

7. Use the graph to find the value of $f(2)$.



Circle your answer:

- 4 -3 -2 -1 -0.6 0 0.6
1 2 3 4 5 6 7 8

8. For the function $g(x) = x + 6$,
find the value of $g(-4)$.

Answer: _____

9. For the function $h(x) = x^2 + 5$,
find the value of $h(3)$.

Answer: _____



Algebra 2 Readiness: Winter Progress

(Continued)

Questions 10-12: Determine if a function is linear or non-linear.

10. Given the function of $f(x)$ provided in the table, circle the answer choice that makes the statement true.

x	0	1	2	3	5
$f(x)$	-4	-1	2	5	8

“The function represented in the table is _____.”

- non-linear because the values of x and $f(x)$ always change at a constant rate
- non-linear because the values of x and $f(x)$ do not always change at a constant rate
- linear because the values of x and $f(x)$ always change at a constant rate
- linear because the values of x and $f(x)$ do not always change at a constant rate

11. Given the function of $g(x)$ provided in the table, circle the answer choice that makes the statement true.

x	0	1	2	3	5
$g(x)$	-4	-1	2	5	11

“The function represented in the table is _____.”

- non-linear because the values of x and $g(x)$ always change at a constant rate
- non-linear because the values of x and $g(x)$ do not always change at a constant rate
- linear because the values of x and $g(x)$ always change at a constant rate
- linear because the values of x and $g(x)$ do not always change at a constant rate

12. Circle all of the linear functions.

$$f(x) = x^2 + 5$$

$$g(x) = 2x + 5$$

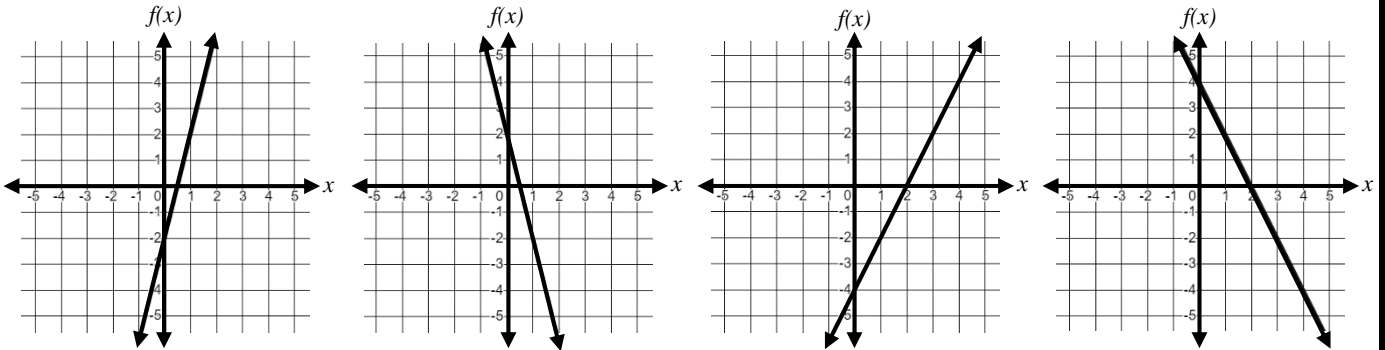
$$h(x) = 2^x + 5$$

$$k(x) = x$$

Questions 13-15: Identify graphs of linear and non-linear functions.

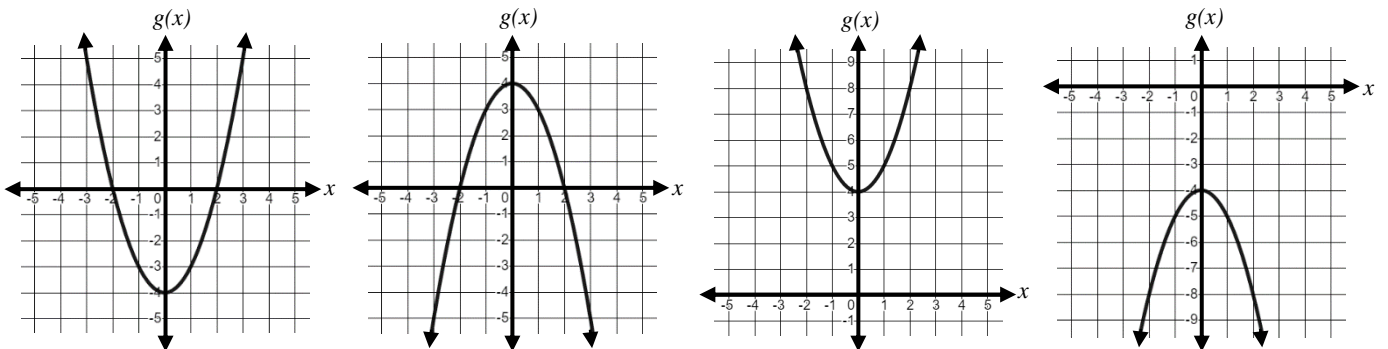
13. The function $f(x) = -2x + 4$ could be represented by which graph?

Circle your answer:



14. The function $g(x) = -x^2 - 4$ could be represented by which graph?

Circle your answer:



15. The function $h(x) = (x + 3)^2 + 5$ could be represented by which graph?

Circle your answer:

