

Day 3: Graphing Quadratics, Polynomials, and Factoring

Key Concepts:

- Graphing Quadratics
 - Identifying, Calculating, and Locating Key Parts
- Polynomials
 - Adding, Subtracting, Multiplying, Dividing
- Factoring Polynomials
- Vocabulary (Quadratics, Polynomials, Factoring)

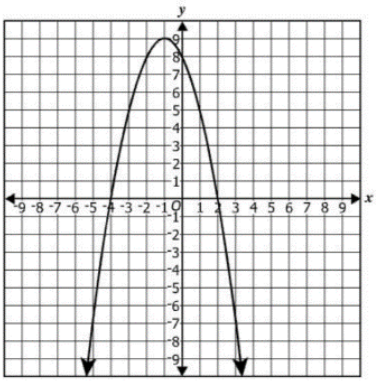
Guided Practice:

Graphing Quadratics (Handout)

Polynomials and Factoring (Handout)

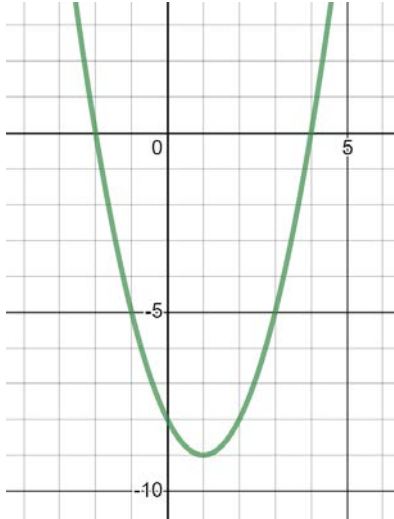
Glossary (Handout)

Independent Practice:

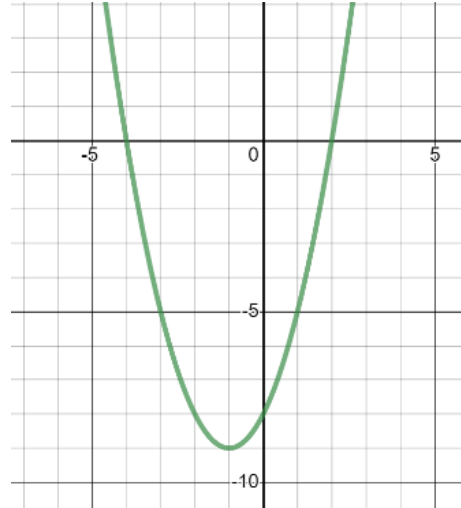
<p>Look at function g.</p> $g(x) = 9x^2 - 16$ <p>Which set contains only the zeros of function g?</p> <p><input type="radio"/> A $\left\{-\frac{4}{3}, \frac{4}{3}\right\}$</p> <p><input type="radio"/> B $\left\{-\frac{4}{3}, 0, \frac{4}{3}\right\}$</p> <p><input type="radio"/> C $\{-16, 9\}$</p> <p><input type="radio"/> D $\{-16, 0, 9\}$</p>	<p>On the grid, identify each of the solutions to $-x^2 - 2x + 8 = 0$.</p> 
<p>What values of x are solutions of $3x^2 + 11x = 20$?</p> <p><input type="radio"/> A $-\frac{4}{3}$ and 5</p> <p><input type="radio"/> B $-\frac{5}{3}$ and 4</p> <p><input type="radio"/> C -4 and $\frac{5}{3}$</p> <p><input type="radio"/> D -5 and $\frac{4}{3}$</p>	<p>Which of these functions has exactly two different zeros?</p> <p><input type="radio"/> A $f(x) = \frac{1}{10}x + 4$</p> <p><input type="radio"/> B $g(x) = \frac{3x - 10}{3}$</p> <p><input type="radio"/> C $h(x) = x^2 - 4x + 4$</p> <p><input type="radio"/> D $k(x) = x^2 + 11x + 24$</p>
<p>Which expression is equivalent to</p> $(4x^2 - 3x + 9) + (7x^2 - 11) + (-x^2 + 7x - 2)?$ <p>A. $10x^2 + 4x - 4$</p> <p>B. $10x^2 - 10x - 22$</p> <p>C. $10x^6 + 4x^2 - 4$</p> <p>D. $11x^2 + 4x + 4$</p>	<p>Which expression is equivalent to</p> $4x(2x^2 - x - 3)?$ <p>A. $6x^2 - 5x - 7$</p> <p>B. $6x^3 - 5x^2 + 7x$</p> <p>C. $8x^2 - 4x + 12$</p> <p>D. $8x^3 - 4x^2 - 12x$</p>

Which graph best represents the function $g(x) = (x - 2)(x + 4)$?

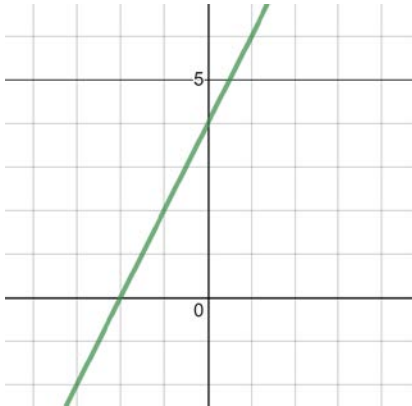
A.



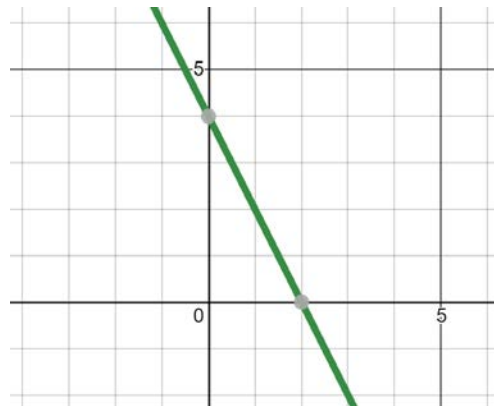
B.



C.



D.



Factor completely:

$$3x^2 - 10x - 8$$

Simplify:

$$(3x^2 - 2x + 5) - (2x^2 - 5x + 1)$$

Factor completely:

$$x^2 - 5x - 14$$

- A. $(x - 2)(x + 7)$
- B. $(x + 2)(x - 7)$
- C. $(x - 1)(x + 14)$
- D. $(x + 1)(x - 14)$

Factor completely:

$$3v^2 + 9v$$

- A. $v(3v + 9)$
- B. $3(v^2 + 3v)$
- C. $3v(v + 3)$
- D. $3v^2(1 + 3v)$

Which of the following is equivalent to:

$$\frac{x^4 y^3}{x^3 y^4}$$

- A. $\frac{x}{y}$
- B. $\frac{y}{x}$
- C. xy
- D. $x^7 y^7$

What is the factored form of $x^2 + 5x - 24$?

- A. $(x - 4)(x + 6)$
- B. $(x - 2)(x + 12)$
- C. $(x - 3)(x + 8)$
- D. $(x - 6)(x + 4)$

What are the x -intercepts of the graph of the following equation?

$$y = x^2 + 6x - 7$$

- A** -7 and -1
- B** 1 and 7
- C** -1 and 7
- D** -7 and 1

If $x \neq 0$, which is equivalent to the following expression?

$$\frac{2x^4 - 6x^3 + 4x^2 + 10x}{2x}$$

- A** $x^3 - 3x^2 + 2x + 5$
- B** $x^3 - 6x^3 + 4x^2 + 5x$
- C** $2x^3 - 6x^2 + 4x + 5$
- D** $2x^4 - 6x^3 + 4x^2 + 5x$