

## Readiness Check for Algebra 2: Advanced Algebra

Show all work.

- 1) Solve.

$$\frac{x-6}{3} = 7(x+2)$$

- 2) Write the equation in terms of  $b$ .

$$y = ax^2 + bx + c$$

- 3) Simplify.

$$\frac{11a^5b^{-3}}{c^{-8}} \left( \frac{b^2}{ac^4} \right)^3$$

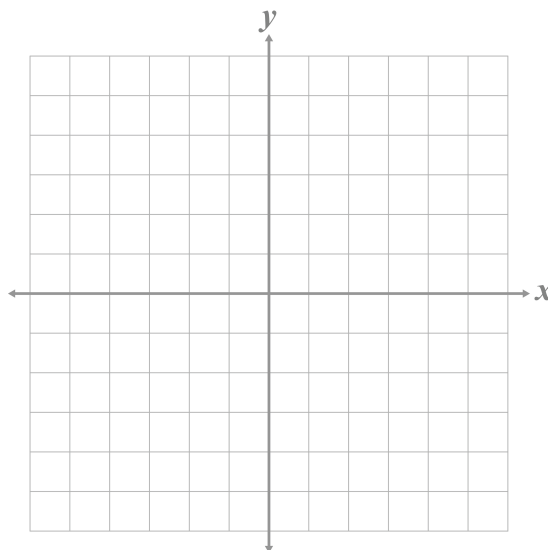
- 4) Write the answer in simplified radical form.

$$\sqrt{9x^3y^4}$$

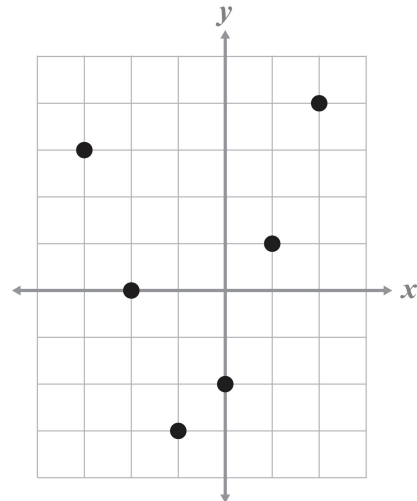
- 5) Graph.

$$y \leq -\frac{2}{3}x + 4$$

$$y \geq 3x$$



6) Name the domain and range of the relation.



7) Simplify.

$$(2x^2 - 7x + 8) - 3(x^2 - 4x)$$

8) Classify the polynomial.

$$15x^3 + x - 7$$

9) Solve the equation for  $b$ .

$$A = bh + 2jk + bk$$

10) Solve.

$$\frac{1}{5}(2x - 3) = \frac{3}{2}x - 1$$

- 11)** Factor completely.

$$16x^3 + 48x^2 - x - 3$$

- 12)** Simplify.

$$(3x^3y^2z)^4 \left( \frac{y^5z^{-6}}{12x^{25}z^5} \right)$$

- 13)** Explain why the relation does or does not represent a function.

$$\{(-5, 1), (-3, -3), (1, -3), (3, -5)\}$$

- 14)** Describe the transformation of the quadratic equation from the parent function.

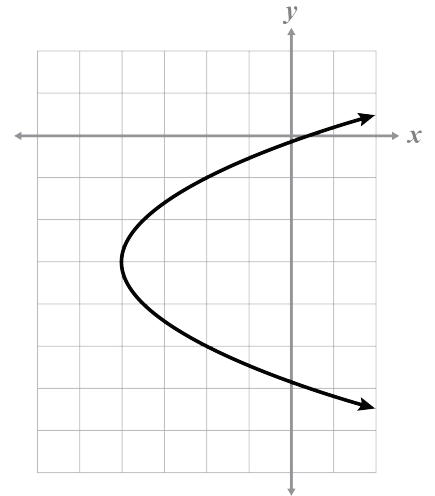
$$y = -(x - 2)^2 + 5$$

- 15)** Solve the system.

$$y = \frac{4}{3}x - 20$$

$$2x + 9y = 72$$

- 16)** Explain why the graph does or does not represent a function.



- 17)** Factor completely.  
 $10x^2y - 54xy^2 - 36y^3$

- 18)** Write the answer in simplified radical form.  
 $\sqrt[3]{8a^8b^5c^{15}}$

- 19)** Describe the transformation of the quadratic equation from the parent function.  
 $y = 2(x + 8)^2 - 1$

- 20)** Solve the system of equations.  
 $5x + 7y = 14$   
 $3x - y = 24$