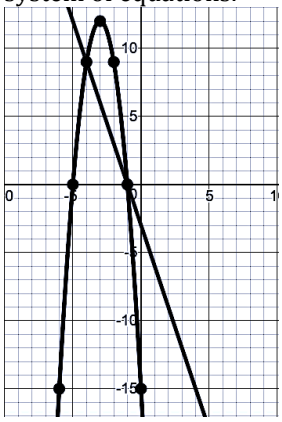
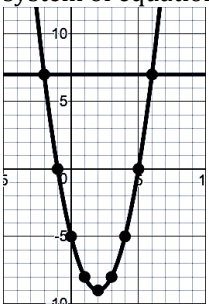
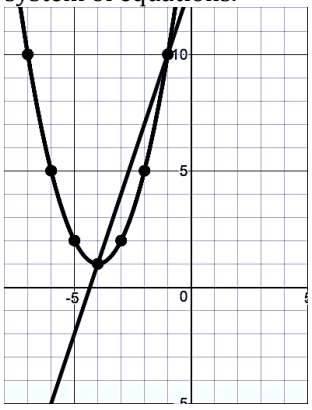
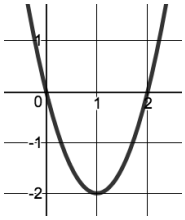
Name: _____

Unit 2 Study Guide

1A. Simplify the polynomial expression. $(-8x^2 - 6x + 1) - (5x^3 - 10x^2 + 3x - 2)$	1B. Simplify the polynomial expression. $(7x^3 + 5x^2 - 6) - (-2x^3 + 6x^2 - 7x + 9)$	1C. Simplify the polynomial expression. $(-9x^3 - 8x^2 + 4x + 5) - (4x^3 - x^2 - 3)$
2A. Multiply and combine like terms. $(x + 1)(3x^2 - 8x + 2)$	2B. Multiply and combine like terms. $(x - 8)(-6x^2 - 3x + 7)$	2C. Multiply and combine like terms. $(x + 6)(4x^2 - 2x - 1)$
3A. Simplify. $\frac{9x^3 - 36x^2 + 81x}{-9x}$	3B. Simplify. $\frac{-15x^4 + 15x^3 - 21x^2}{3x^2}$	3C. Simplify. $\frac{-24x^3 + 40x^2 + 16x}{8x}$
4A. Factor completely. $64x^2 - 25$	4B. Factor completely. $36x^2 - 1$	4C. Factor completely. $9x^2 - 16$
5A. Which solution is equivalent to $x^5 = 36$? a. $x = 36^{\frac{1}{5}}$ b. $x = 6^{\frac{5}{2}}$ c. $x = 36^5$ d. $x = 36^{\frac{5}{2}}$ e. None of these solutions	5B. Which solution is equivalent to $x^7 = 25$? a. $x = 25^7$ b. $x = 25^{\frac{7}{2}}$ c. $x = 25^{\frac{1}{7}}$ d. $x = 5^{\frac{7}{2}}$ e. None of these solutions	5C. Which solution is equivalent to $x^3 = 8$? a. $x = 2^3$ b. $x = 8^3$ c. $x = 8^{\frac{3}{2}}$ d. $x = 8^{\frac{1}{3}}$ e. None of these solutions
6A. Solve the system of equations using substitution or elimination. $\begin{cases} 3y = 7x - 13 \\ y = -7x + 33 \end{cases}$	6B. Solve the system of equations using substitution or elimination. $\begin{cases} y = 3x - 20 \\ 4y = -3x + 40 \end{cases}$	6C. Solve the system of equations using substitution or elimination. $\begin{cases} -2y = x - 5 \\ 2y = -5x + 9 \end{cases}$
7A. Determine the solution(s) to the system of equations. 	7B. Determine the solution(s) to the system of equations. 	7C. Determine the solution(s) to the system of equations. 

8A.

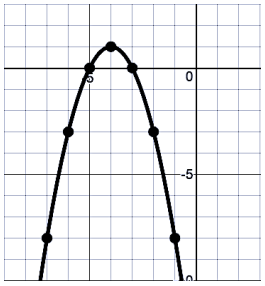


a. Determine the vertex of the quadratic.

b. Identify if the quadratic has a maximum or a minimum and determine its value.

c. Determine the axis of symmetry of the quadratic.

8B.



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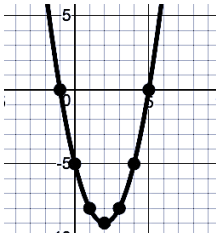
8C.



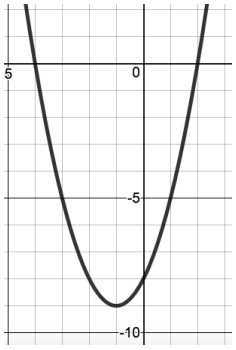
a. Determine the vertex of the quadratic.

b. Identify if the quadratic has a maximum or a minimum and determine its value.

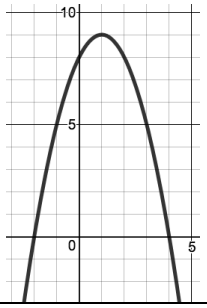
c. Determine the axis of symmetry of the quadratic.

9A. Identify all parabolas that have zeros at -2 & 4. *(see all 6 options below)*

A

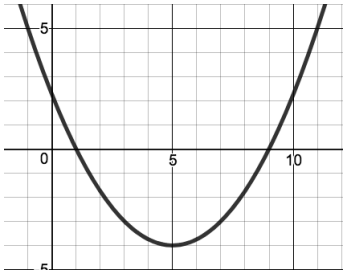


D

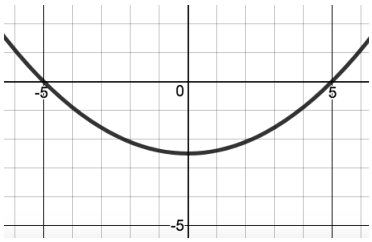


9B. Identify all parabolas that have zeros at 1 & 9. *(see all 6 options below)*

B

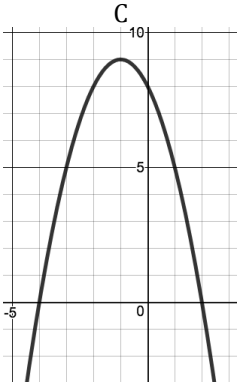


E

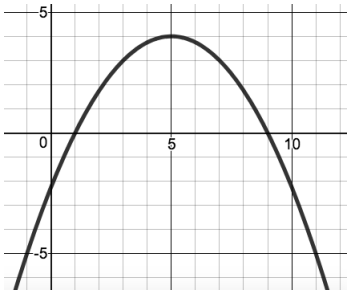


9C. Identify all parabolas that have zeros at -5 & 5. *(see all 6 options below)*

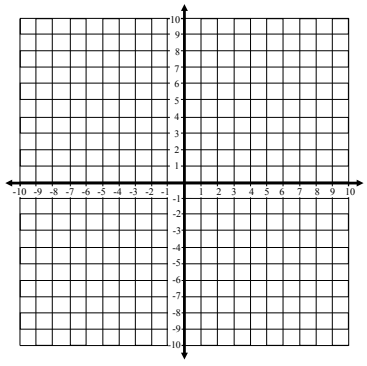
C



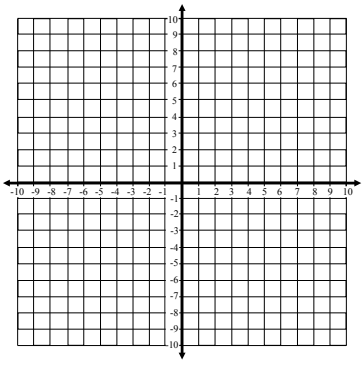
F



10A. Graph the quadratic that has a vertex at $(-2, 4)$, a y-intercept at $(0, 3)$ and roots at $x = -6$ and $x = 2$.



10B. Graph the quadratic that has a vertex at $(-6, -3)$, a y-intercept at $(0, 9)$ and roots at $x = -9$ and $x = -3$.



10C. Graph the quadratic that has a vertex at $(-3, 4)$, a y-intercept at $(0, -5)$ and roots at $x = -5$ and $x = -1$.