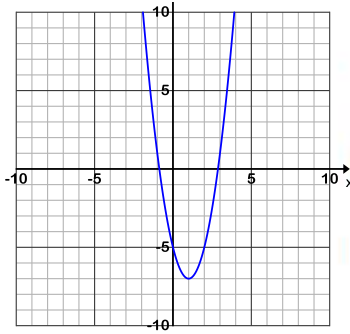


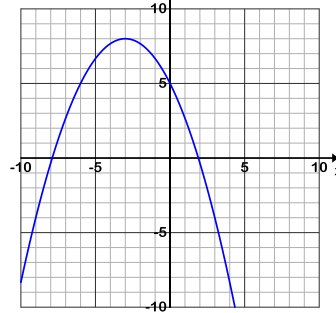
Chapter 9 Concept 1

1. $y = 2x^2 - 4x - 5$



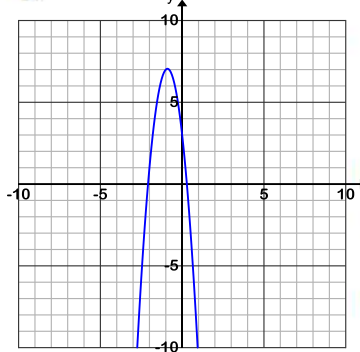
Vertex: _____
 Axis of symmetry: _____
 X= _____
 Max / min _____
 Opens up/opens down _____
 Normal / skinny / fat _____

2. $y = -\frac{1}{3}x^2 - 2x + 5$



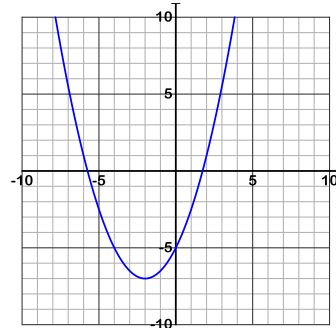
Vertex: _____
 Axis of symmetry: _____
 X= _____
 Max / min _____
 Opens up/opens down _____
 Normal / skinny / fat _____

3. $y = -5x^2 - 9x + 3$



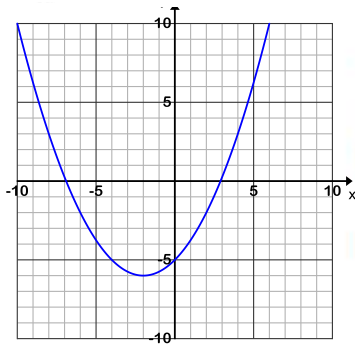
Vertex: _____
 Axis of symmetry: _____
 X= _____
 Max / min _____
 Opens up/opens down _____
 Normal / skinny / fat _____

4. $y = \frac{1}{2}x^2 + 2x - 5$



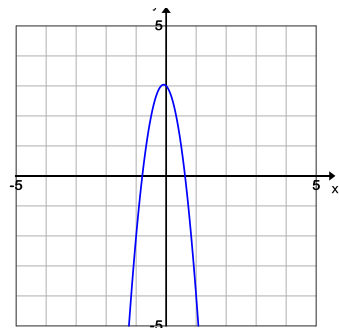
Vertex: _____
 Axis of symmetry: _____
 X= _____
 Max / min _____
 Opens up/opens down _____
 Normal / skinny / fat _____

5. $y = \frac{1}{4}x^2 + x - 5$



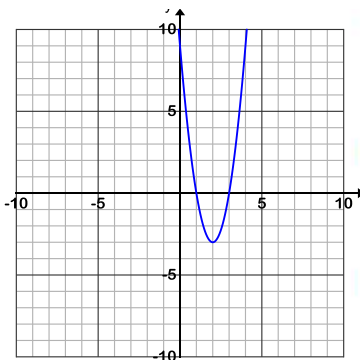
Vertex: _____
 Axis of symmetry: _____
 X= _____
 Max / min _____
 Opens up/opens down _____
 Normal / skinny / fat _____

6. $y = -4x^2 - x + 3$



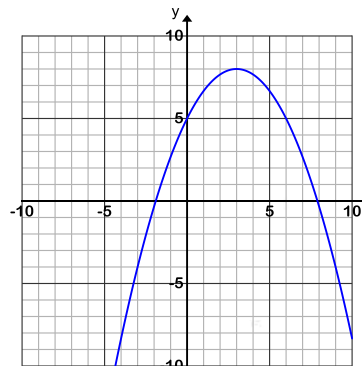
Vertex: _____
 Axis of symmetry: _____
 X= _____
 Max / min _____
 Opens up/opens down _____
 Normal / skinny / fat _____

7. $y = 3x^2 - 12x + 9$



Vertex: _____
 Axis of symmetry: _____
 X= _____
 Max / min _____
 Opens up/opens down _____
 Normal / skinny / fat _____

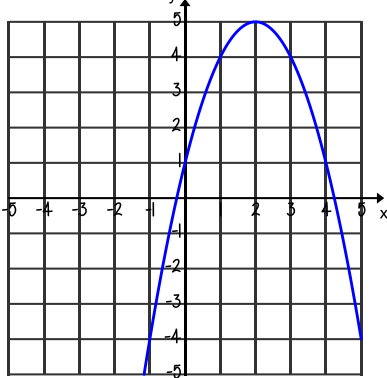
8. $y = -\frac{1}{3}x^2 + 2x + 5$



Vertex: _____
 Axis of symmetry: _____
 X= _____
 Max / min _____
 Opens up/opens down _____
 Normal / skinny / fat _____

Chapter 9 Concept 3. Identify how many zeroes the graph has, and what they are.

1. $y = -x^2 + 4x + 1$



Opens: Up or Down

Vertex: (,)

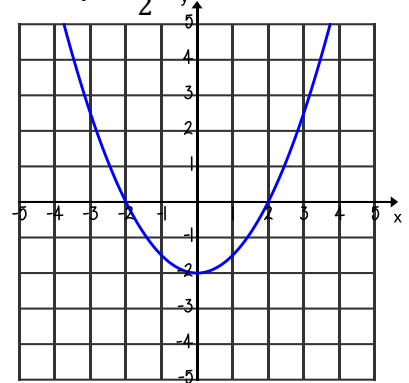
Axis of symmetry: $x = \underline{\hspace{2cm}}$

$a = \underline{\hspace{2cm}}$, so the graph is

Wide(fat), Narrow (skinny) or Normal
(circle one)

Roots: btw $\underline{\hspace{1cm}}$ & $\underline{\hspace{1cm}}$, btw $\underline{\hspace{1cm}}$ & $\underline{\hspace{1cm}}$

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



Opens: Up or Down

Vertex: (,)

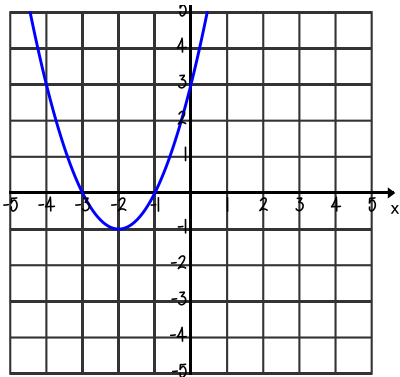
Axis of symmetry: $x = \underline{\hspace{2cm}}$

$a = \underline{\hspace{2cm}}$, so the graph is

Wide(fat), Narrow (skinny) or Normal
(circle one)

Roots: $\underline{\hspace{2cm}}$

3. $y = x^2 + 4x + 3$



Opens: Up or Down

Vertex: (,)

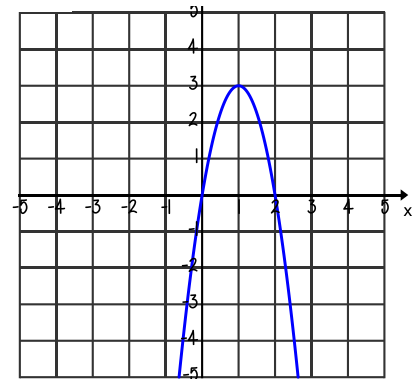
Axis of symmetry: $x = \underline{\hspace{2cm}}$

$a = \underline{\hspace{2cm}}$, so the graph is

Wide(fat), Narrow (skinny) or Normal
(circle one)

Roots: $\underline{\hspace{2cm}}$

4. $y = -3x^2 + 6x$



Opens: Up or Down

Vertex: (,)

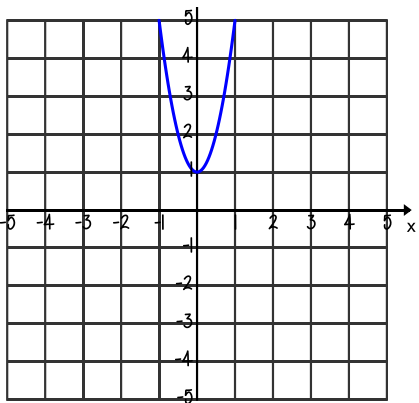
Axis of symmetry: $x = \underline{\hspace{2cm}}$

$a = \underline{\hspace{2cm}}$, so the graph is

Wide(fat), Narrow (skinny) or Normal
(circle one)

Roots: $\underline{\hspace{2cm}}$

5. $y = 4x^2 + 1$



Opens: Up or Down

Vertex: (,)

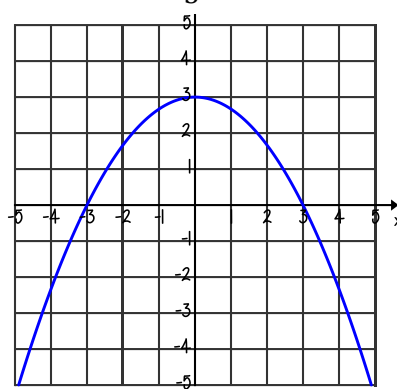
Axis of symmetry: $x = \underline{\hspace{2cm}}$

$a = \underline{\hspace{1cm}}$, so the graph is

Wide(fat), Narrow (skinny) or Normal
(circle one)

Roots:

6. $y = -\frac{1}{3}x^2 + 3$



Opens: Up or Down

Vertex: (,)

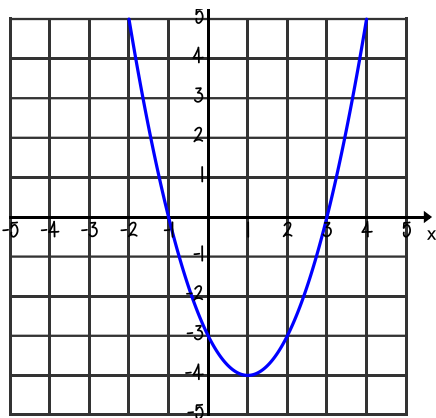
Axis of symmetry: $x = \underline{\hspace{2cm}}$

$a = \underline{\hspace{1cm}}$, so the graph is

Wide(fat), Narrow (skinny) or Normal
(circle one)

Roots:

7. $y = x^2 + 2x - 3$



Opens: Up or Down

Vertex: (,)

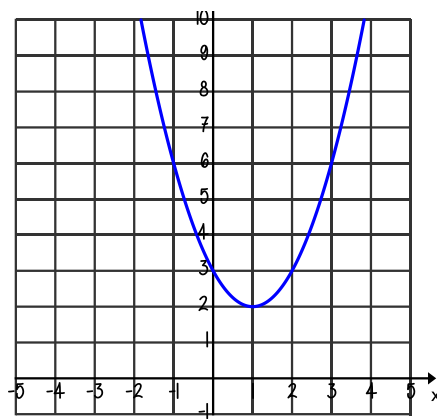
Axis of symmetry: $x = \underline{\hspace{2cm}}$

$a = \underline{\hspace{1cm}}$, so the graph is

Wide(fat), Narrow (skinny) or Normal
(circle one)

Roots:

8. $y = x^2 - 2x + 3$



Opens: Up or Down

Vertex: (,)

Axis of symmetry: $x = \underline{\hspace{2cm}}$

$a = \underline{\hspace{1cm}}$, so the graph is

Wide(fat), Narrow (skinny) or Normal
(circle one)

Roots:

Chapter 9 Concept 4.

Equation	Identify a= b= c= Then use $b^2 - 4ac$	Value of Discriminant (#)	Discriminant <i>Positive</i> <i>Negative</i> <i>Zero</i>	How many Solutions/ zeroes/ roots/ x-intercepts: <i>Zero</i> <i>One</i> <i>Two</i>	Possible Picture
1. $3p^2 - 2p - 1 = 0$			<i>Positive</i> <i>Negative</i> <i>Zero</i>	<i>Zero</i> <i>One</i> <i>Two</i>	
2. $x^2 - 3x + 8 = 0$			<i>Positive</i> <i>Negative</i> <i>Zero</i>	<i>Zero</i> <i>One</i> <i>Two</i>	
3. $7x^2 - 4x + 2 = 0$			<i>Positive</i> <i>Negative</i> <i>Zero</i>	<i>Zero</i> <i>One</i> <i>Two</i>	
4. $-n^2 - 4n - 4 = 0$			<i>Positive</i> <i>Negative</i> <i>Zero</i>	<i>Zero</i> <i>One</i> <i>Two</i>	
5. $4n^2 + 2n - 7 = 0$			<i>Positive</i> <i>Negative</i> <i>Zero</i>	<i>Zero</i> <i>One</i> <i>Two</i>	
6. $-2r^2 + 8r - 8 = 0$			<i>Positive</i> <i>Negative</i> <i>Zero</i>	<i>Zero</i> <i>One</i> <i>Two</i>	
7. $6x^2 - 3x - 3 = 0$			<i>Positive</i> <i>Negative</i> <i>Zero</i>	<i>Zero</i> <i>One</i> <i>Two</i>	
8. $-2n^2 - 3n - 6 = 0$			<i>Positive</i> <i>Negative</i> <i>Zero</i>	<i>Zero</i> <i>One</i> <i>Two</i>	

Chapter 9 Concept 6.

Set 2. Solve the equation. Simplify the answer as much as possible.

1. $x^2 = 36$

2. $x^2 = 49$

3. $164 = x^2$

4. $x^2 = 48$

5. $2x^2 = 36$

6. $4x^2 - 1 = 35$

7. $x^2 = 32$

8. $3x^2 = 81$

9. $2x^2 + 2 = 24$

10. $x^2 = \frac{4}{9}$

11. $2x^2 = \frac{48}{4}$

12. $5x^2 - 1 = 124$

13. $144 = x^2$

14. $5x^2 + 5 = 25$

15. $x^2 = \frac{12}{9}$

16. $\frac{2}{3}x^2 = 6$

17. $\frac{1}{2}x^2 - 1 = 80$

18. $\frac{1}{4}x^2 + 4 = 68$

Chapter 9 Concept 7. Solve by factoring.

Use the zero-product property to solve. (Solve by square root or factoring difference of squares)

1. $0 = x^2 - 100$

2. $4x^2 - 25 = 0$

3. $25x^2 - 4 = 0$

Find the zeroes.

4. $y = x^2 - x - 6$

5. $y = 3x^2 - x - 2$

6. $y = x^2 - 1$

Solve the equations.

7. $2x^2 - 5x - 3 = 0$

8. $x^2 + 4x + 4 = 0$

9. $x^2 + 6x + 9 = 0$

10. $y = x^2 + 13x + 36$

11. $y = x^2 - 15x + 36$

12. $x^2 + 14x + 13 = 0$

Chapter 9 Concept 9.

Solve for the values of x.

1. $x^2 - 4x - 45 = 0$ $\frac{-(\) \pm \sqrt{(\)^2 - 4(\)(\)}}{2(\)}$

a = ____

b = ____

c = ____

2.

$2p^2 + 8p - 24 = 0$ $\frac{-(\) \pm \sqrt{(\)^2 - 4(\)(\)}}{2(\)}$

a = ____

b = ____

c = ____

Find the roots of each equation.

3. $y = 2p^2 + 4p - 30$ $\frac{-(\) \pm \sqrt{(\)^2 - 4(\)(\)}}{2(\)}$

a = ____

b = ____

c = ____

4. $y = x^2 - 3x - 18$

a = ____

b = ____

c = ____

$\frac{-(\) \pm \sqrt{(\)^2 - 4(\)(\)}}{2(\)}$

Find the solutions of each equation.

5. $y = x^2 + 2x - 15$ $\frac{-(\) \pm \sqrt{(\)^2 - 4(\)(\)}}{2(\)}$

a = ____

b = ____

c = ____

6. $y = 2x^2 - 8x - 24$

a = ____

b = ____

c = ____

$\frac{-(\) \pm \sqrt{(\)^2 - 4(\)(\)}}{2(\)}$

What happens if it's not in standard form?

7. $2a^2 + 3a - 7 = -5$

Standard form: _____

a = ____

b = ____

c = ____

$$\frac{-(\quad) \pm \sqrt{(\quad)^2 - 4(\quad)(\quad)}}{2(\quad)}$$

8. $2n^2 - 9n + 11 = 2$

Standard form: _____

a = ____

b = ____

c = ____

$$\frac{-(\quad) \pm \sqrt{(\quad)^2 - 4(\quad)(\quad)}}{2(\quad)}$$