

Review for Graphing Quadratics Quiz

1) $y = (x - 7)^2 + 2$

Axis of Symmetry is $x = \underline{\hspace{2cm}}$

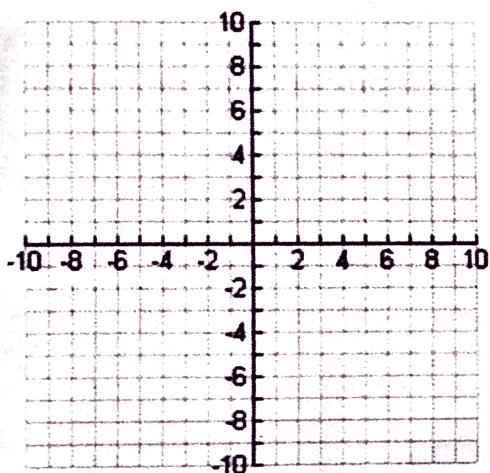
Vertex: $(\underline{\hspace{1cm}}, \underline{\hspace{1cm}})$

Opens up or down?

Find pts 1 unit L/R of vertex: $(\underline{\hspace{1cm}}, \underline{\hspace{1cm}})$ & $(\underline{\hspace{1cm}}, \underline{\hspace{1cm}})$

y-intercept: $(0, \underline{\hspace{1cm}})$

extra points $(-5, \underline{\hspace{1cm}})$ and $(-6, \underline{\hspace{1cm}})$



2) $y = -4x^2 + 8x + 3$ $a =$ $b =$ $c =$

Opens up or down?

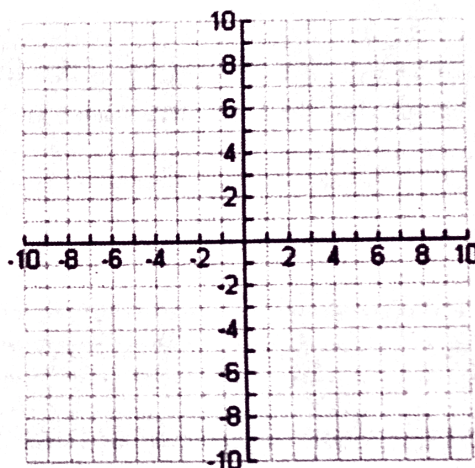
Is vertex a max or min?

y-intercept: $(0, \underline{\hspace{1cm}})$

Axis of Symmetry is $x = \underline{\hspace{2cm}}$

Vertex: $(\underline{\hspace{1cm}}, \underline{\hspace{1cm}})$

Find pts 1 unit L/R of vertex at $(\underline{\hspace{1cm}}, \underline{\hspace{1cm}})$ & $(\underline{\hspace{1cm}}, \underline{\hspace{1cm}})$



3) $y = -(x + 8)(x + 1)$

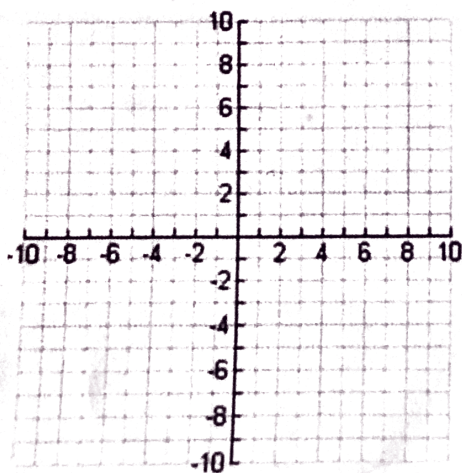
x-intercepts: $(\underline{\hspace{1cm}}, 0)$ $(\underline{\hspace{1cm}}, 0)$

Axis of Symmetry is $x = \underline{\hspace{2cm}}$

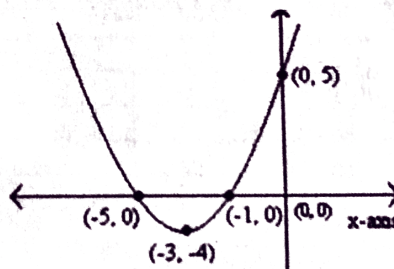
Vertex: $(\underline{\hspace{1cm}}, \underline{\hspace{1cm}})$

y-intercept: $(0, \underline{\hspace{1cm}})$

Extra point: $(\underline{\hspace{1cm}}, \underline{\hspace{1cm}})$



4)



Standard Form: $\underline{\hspace{4cm}}$

Vertex Form: $\underline{\hspace{4cm}}$

Intercept Form: $\underline{\hspace{4cm}}$

5. It is Super Bowl season and teams that have made the play-offs have specialists evaluating every aspect of their field game. One particular team received news that their recently injured kicker's field goal kick is modeled by the function $h(t) = -16(x - 1)^2 + 16$, where $h(t)$ is the height of the ball in feet t seconds after it is kicked.

a. If the football needs to clear a 17-foot goalpost, will the ball make it over if this particular team member kicks it? Explain your answer.

b. What is the average rate of change of the football's height from the moment it reaches its maximum height to the moment it hits the ground?

6. Find the equivalent equation across all three forms.

Factored Form	Standard Form	Vertex Form
$f(x) = (x - 2)(x - 6)$		
	$g(x) = x^2 - 6x$	
		$h(x) = (x + 3)^2 - 9$

Review for Graphing Quadratics Quiz

1) $y = (x - 7)^2 + 2$

Axis of Symmetry is $x = 7$

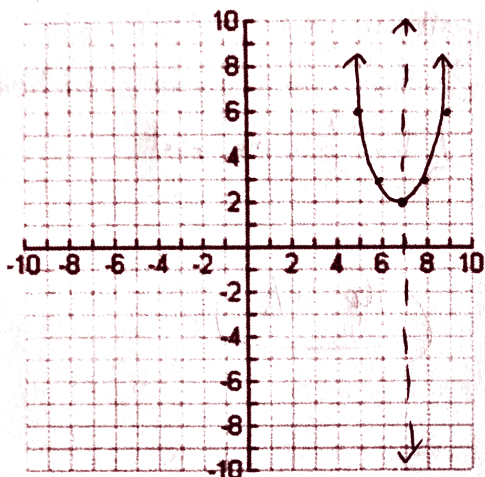
Vertex: $(7, 2)$

Opens up or down?

Find pts 1 unit L/R of vertex: $(8, 3)$ & $(6, 3)$

y-intercept: $(0, 51)$

extra points $(-5, 146)$ and $(-6, 171)$



2) $y = -4x^2 + 8x + 3$ $a = -4$ $b = 8$ $c = 3$

Opens up or down?

Is vertex a max or min?

$$\frac{-8}{2(-4)} = \frac{-8}{-8} = 1$$

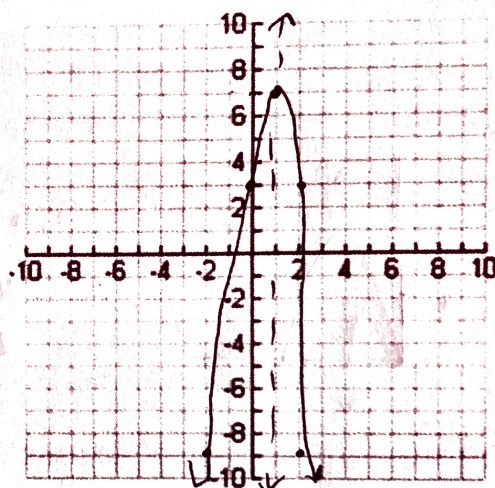
y-intercept: $(0, 3)$

$$-4(1)^2 + 8(1) + 3$$

Axis of Symmetry is $x = 1$

Vertex: $(1, 7)$

Find pts 1 unit L/R of vertex at $(0, 3)$ & $(2, 3)$



3) $y = -(x + 8)(x + 1)$

x-intercepts: $(-8, 0)$ & $(-1, 0)$

Axis of Symmetry is $x = -4.5$

Vertex: $(-4.5, 12.25)$

halfway between -8 & -1

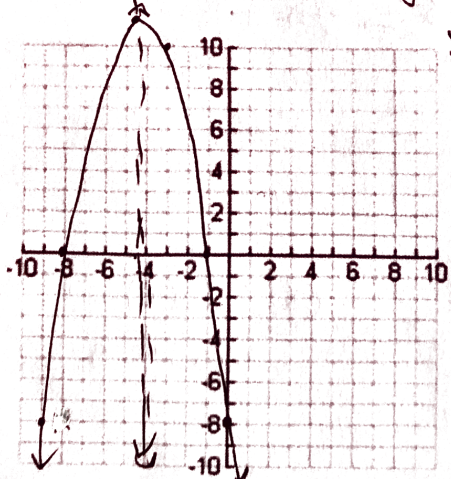
y-intercept: $(0, -8)$

$$y = -(-4.5 + 8)(-4.5 + 1)$$

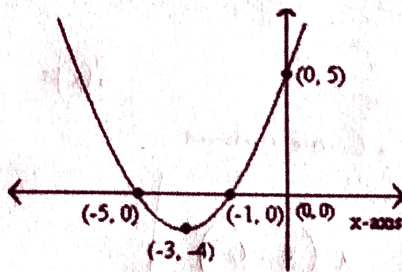
Extra point: $(-3, 10)$

$$y = -(3.5)(-3.5)$$

$$y = 12.25$$



4)



$$(x + 3)(x + 3) - 4$$

$$x^2 + 6x + 9 - 4$$

$$x^2 + 6x + 5$$

Standard Form: $x^2 + 6x + 5$

Vertex Form: $y = (x + 3)^2 - 4$

Intercept Form: $y = (x + 5)(x + 1)$

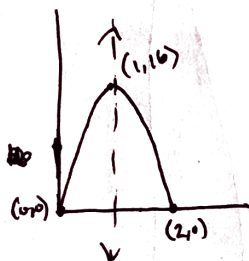
5. It is Super Bowl season and teams that have made the play-offs have specialists evaluating every aspect of their field game. One particular team received news that their recently injured kicker's field goal kick is modeled by the function $h(t) = -16(t-1)^2 + 16$, where $h(t)$ is the height of the ball in feet t seconds after it is kicked.

a. If the football needs to clear a 17-foot goalpost, will the ball make it over if this particular team member kicks it? Explain your answer.

$$17 = -16(x-1)^2 + 16$$

Well, the vertex is $(1, 16)$ & the graph opens down. So 16 is the maximum height. The football will not clear the goal post.

b. What is the average rate of change of the football's height from the moment it reaches its maximum height to the moment it hits the ground? $[1, 2]$ is the interval



$$(1, 16) \quad (2, 0)$$

$$\frac{16-0}{2-1} = \frac{16}{1}$$

$$\frac{16 \text{ ft/s}}{1}$$

6. Find the equivalent equation across all three forms.

Factored Form	Standard Form	Vertex Form
$f(x) = (x-2)(x-6)$ 2 & 6 are x intercepts	$f(x) = x^2 - 8x + 12$	$f(x) = (x-4)^2 - 4$
$g(x) = x(x-6)$	$g(x) = x^2 - 6x$ $-\frac{(-6)}{2(1)} = 3$	$g(x) = (x-3)^2 - 9$ $\rightarrow g(3) = 9 - 18 = -9$
$h(x) = x(x+6)$	$h(x) = x^2 + 6x$	$h(x) = (x+3)^2 - 9$

Challenge!

$$(x+3)(x+3) - 9$$

$$x^2 + 6x + 9 - 9$$