

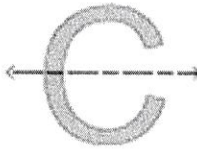

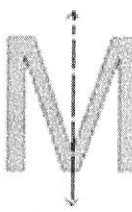

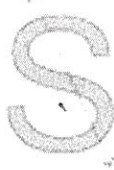
Name: \_\_\_\_\_

UNIT 9

Date: \_\_\_\_\_

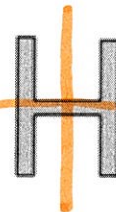




LESSON 3.5

**Do Now:** Is the dotted line on each letter a line of symmetry? Write yes or no

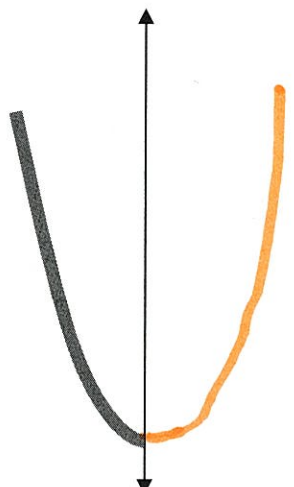
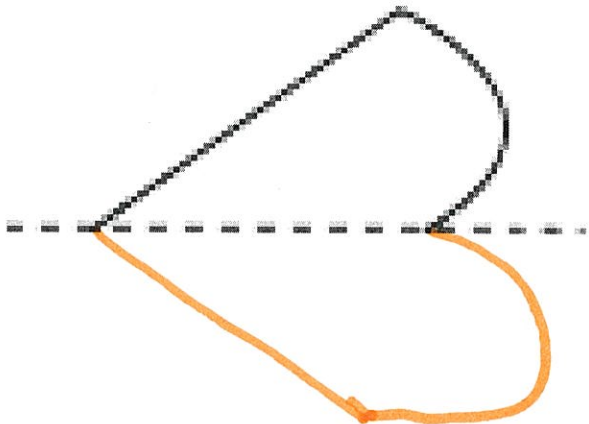
1. 	2. 	3. 	4. 	5. 
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## AIM: AXIS OF SYMMETRY

Draw the line of symmetry. Some letters have more than one line of symmetry.

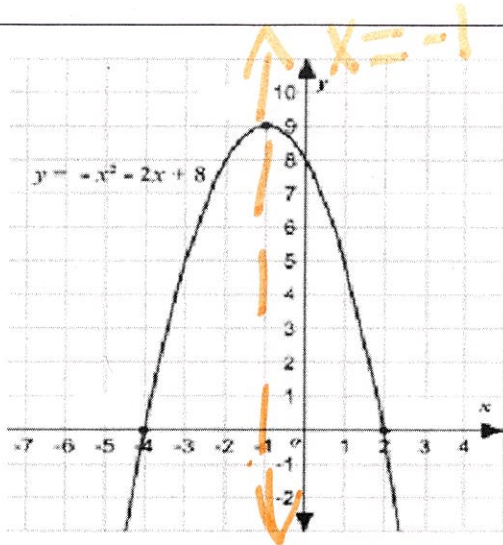
6. 	7. 	8. 	9. 	10. 
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Directions: Using your mira, draw the reflection of the figure across the given reflection line.

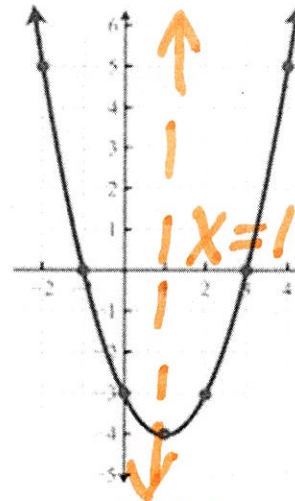
11. 	12. 
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Directions: Using your mira, draw the line of reflection. Label your line of reflection

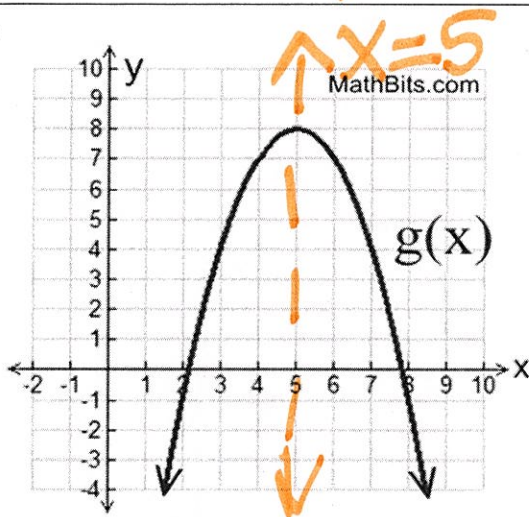
13.



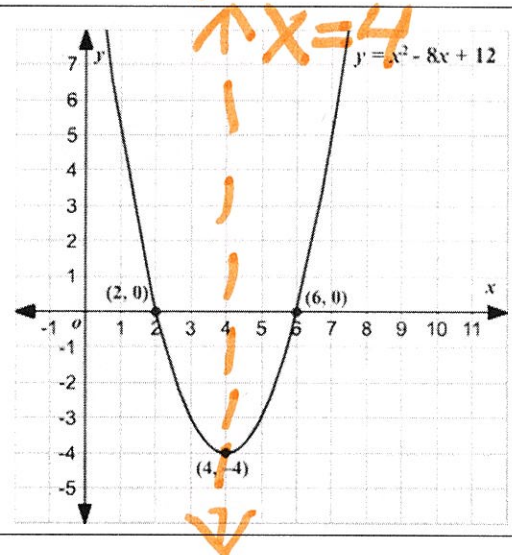
14.



15.



16.



Directions: For the following quadratic function determine the axis of symmetry.

Step 1: Identify the a-value and b-value.

Step 2: Use the axis of symmetry formula:

$$x = \frac{-b}{2a}$$

17.  $y = x^2 - 8x + 7$

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

$$x = \frac{8}{2}$$

$$\boxed{x = 4}$$

$$a = 1$$

$$b = -8$$

18.  $y = -x^2 + 4x - 9$

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

$$x = \frac{-4}{-2}$$

$$\boxed{x = 2}$$

$$a = -1$$

$$b = 4$$

$$19. f(x) = 2x^2 - 7x + 2$$

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

$$x = \frac{7}{4}$$

$$\boxed{x = 1.75}$$

$$a = 2$$

$$b = -7$$

$$20. y = -x^2 + 4$$

$$x = -\frac{(0)}{2(-1)}$$

$$x = \frac{0}{2}$$

$$\boxed{x = 0}$$

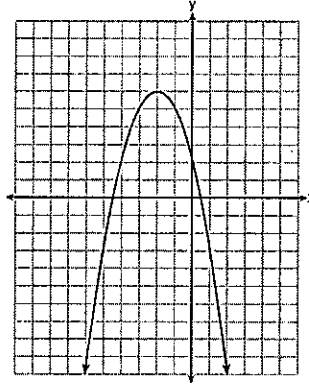
$$a = 1$$

$$b = 0$$

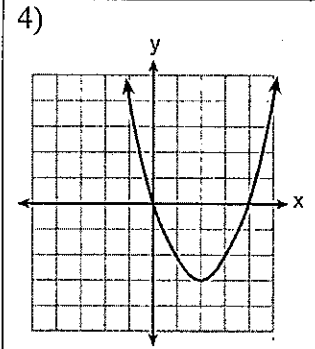
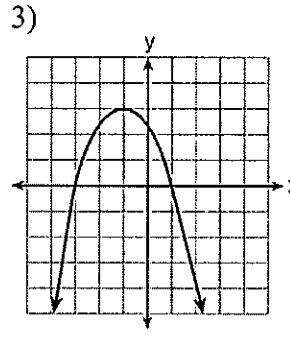
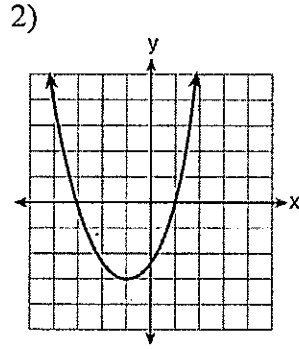
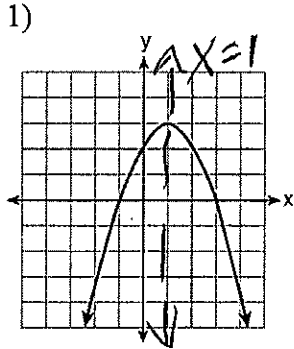
21. What are the vertex and the axis of symmetry of the parabola shown in the graph below?

vertex  $(-2, 6)$

$$x = -2$$



22. Which parabola has an axis of symmetry of  $x = 1$ ?



Directions: For the following quadratic function determine the axis of symmetry.

$$23. h = -8t^2 + 40t + 5$$

$$x = \frac{-(40)}{2(-8)}$$

$$x = \frac{-40}{-16}$$

$$\boxed{x = 2.5}$$

$$a = -8$$

$$b = 40$$

$$24. h(x) = -\frac{1}{225}x^2 + \frac{2}{3}x$$

$$x = -\frac{(\frac{2}{3})}{2(-\frac{1}{225})}$$

$$\boxed{x = 75}$$

$$a = -\frac{1}{225}$$

$$b = \frac{2}{3}$$

25. Given :  $x^2 - 9 = 0$

a) Find the roots of the given equation algebraically

$$\frac{(x-3)(x+3) = 0}{x=3 \quad | \quad x=-3}$$

x	y
3	0
0	-9
-3	0

b) Identify the roots.

$$\{+3, -3\}$$

c) Identify the y-intercept.

$$-9$$

d) Does the parabola have a maximum or minimum point?

e) Identify the Turning Point.  $(0, -9)$

f) Identify the Axis of Symmetry.  $x=0$

g) For which interval is quadratic function increasing?  $(0, \infty)$

h) For which interval is quadratic function decreasing?  $(-\infty, 0)$

