1)

Use the graph to identify the following:

    a.   Vertex_____
    b.   AOS_____
    c.   Min/ Max _____
    d.   Domain _____
    e.   Range _____
    f.   X-Int (zeros) _____
    g.   Y-Intercept _____
    h.   Int of Increase _____
    i.   Int of Decrease _____

Find the x and y intercepts for the following quadratic functions.

2) $y = 5x^2 - 4x - 3$

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

Find the AOS and the vertex for each function.

4) $y = 3x^2 - 12x + 1$

5) $y = \frac{1}{2}(x - 7)^2 - 2$

List the transformations for the following functions.

6) $y = -\left(\frac{4}{3}x\right)^2$

7) $y = 6(x - 7)^2 - 2$

Write a quadratic function based on the following transformations.

8) The parent function has a vertical stretch by factor of 5, is reflected over the x-axis and is horizontally shifted left 8.

9) The parent function is vertically shifted up 1, reflected over the y-axis and has a vertical shrink of 1/3.

Convert between each form

10) $y = -4(x + 5)^2 - 3$

11) $y = x^2 + 6x - 4$

12) $y = x^2 - 10x + 8$

Graph a **sketch** of the following functions. (Plot the vertex and draw parabola opening in the correct direction)

13) $f(x) = -(x + 5)^2$

14) $f(x) = 3(x - 2)^2 - 6$

Determine the given characteristics of the quadratics listed. Graph each using a 5 point chart.

15) $f(x) = -2x^2 - 8x + 3$

16) $f(x) = 3(x - 1)^2 + 2$

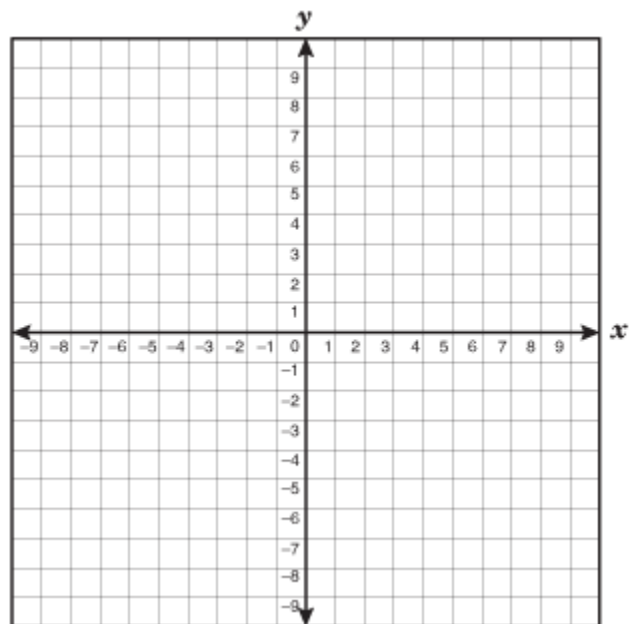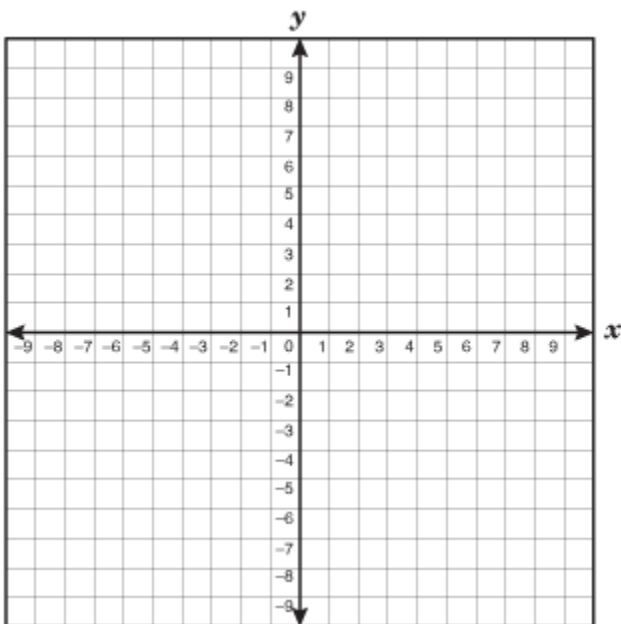Direction

Vertex

AOS

Domain

Range

X-Intercept

Y-Intercept

Max/Min? Where?

Int of Inc

Int of Dec

End Behavior

Determine the given characteristics of the quadratics listed. Graph each using a 5 point chart.

17) $f(x) = x^2 - 4x + 3$ 18) $f(x) = (x + 2)^2 - 8$

Direction

Vertex

AOS

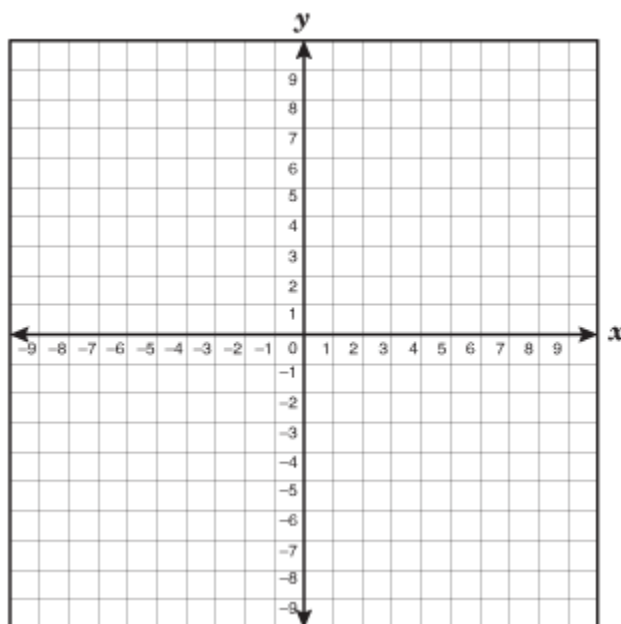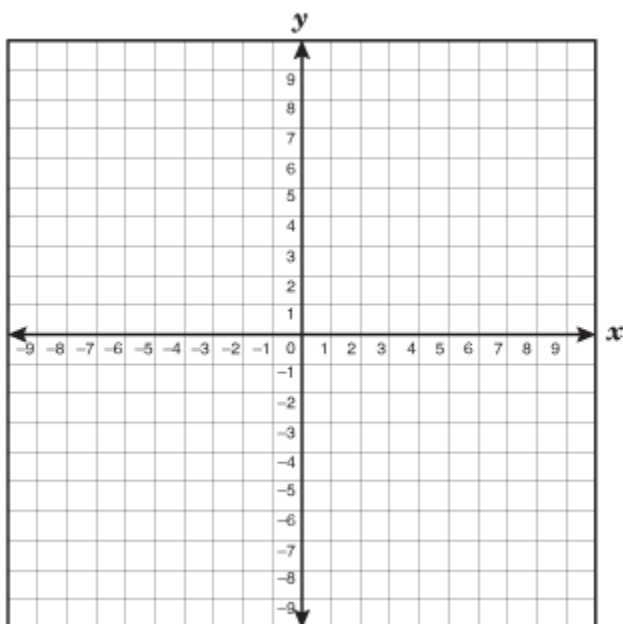Domain

Range
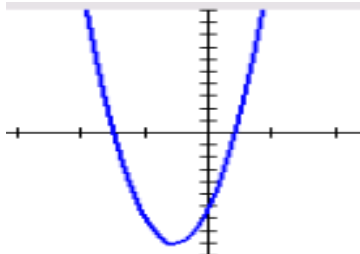
X-Intercept

Y-Intercept

Max/Min? Where?

Int of Inc

Int of Dec

End Behavior

19. What methods can you use to solve for the x-intercepts?

20. Write the quadratic formula.

21. Write a quadratic equation in vertex form and write one in standard form.

f(x)= $10x^2 + 11x - 6$

g(x)= $x^2 - 8x + 16$

1	9
2	4
3	1
4	0
5	1
6	4
7	9

22. If f(x) is shifted up 10 units, and g(x) stayed the same, which function would have the lowest minimum?

23. Which function has the highest y-intercept?

24. What is/are the x-intercept(s) of f(x)? What is/are x-intercept(s) of g(x)?

25. Which function has the most solutions?

26. Which function's interval of increase starts farther to the left?

27. Where is the average rate of change the greatest? f(x)= $2x^2 - 8x + 10$

[-4,-1]   [-1,0]   [1,4]   [2,6]