Secondary Math 2 Honors Name_____

3.2 Vertex Form and Intercept Form

Date_____ Period____

1) What do the x-intercepts of a graph represent?

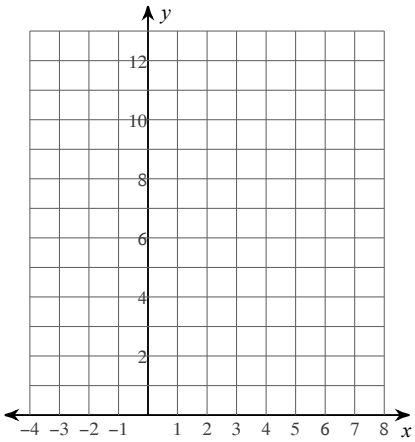
2) Describe how to find the vertex from intercept form.

3) Describe how to find the vertex from vertex form.

4) What do imaginary solutions look like on a graph?

Sketch the graph of each function. Then identify the key features. Approximate where necessary.

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



6) a. x-intercept(s):

b. y-intercept:

c. axis of symmetry:

d. vertex:

e. Max/Min Value:

f. Direction of opening:

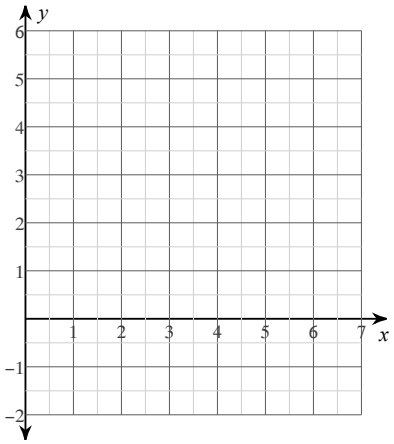
g. Domain: h. Range:

i. Increasing: j. Decreasing:

k. Positive: l. Negative:

m. End behavior:

7) $f(x) = -(x-4)^2 + 4$



8) a. x-intercept(s):

b. y-intercept:

c. axis of symmetry:

d. vertex:

e. Max/Min Value:

f. Direction of opening:

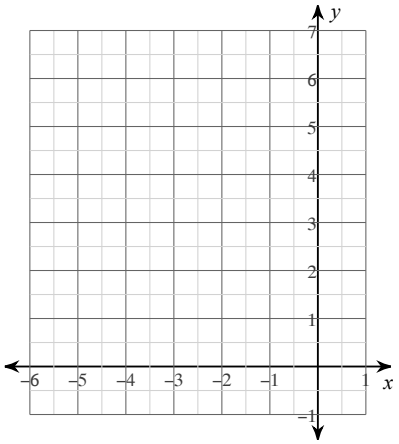
g. Domain: h. Range:

i. Increasing: j. Decreasing:

k. Positive: l. Negative:

l. End behavior:

9) $y = \frac{1}{2}(x+4)^2 + 3$



10) a. x-intercept(s):

b. y-intercept:

c. axis of symmetry:

d. vertex:

e. Max/Min Value:

f. Direction of opening:

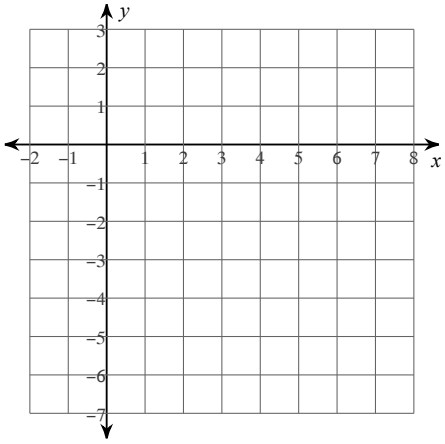
g. Domain: h. Range:

i. Increasing: j. Decreasing:

k. Positive: l. Negative:

l. End behavior:

11) $f(x) = -2(x-3)^2 + 2$



12) a. x-intercept(s):

b. y-intercept:

c. axis of symmetry:

d. vertex:

e. Max/Min Value:

f. Direction of opening:

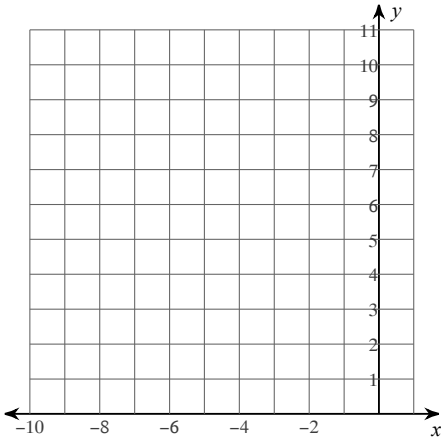
g. Domain: h. Range:

i. Increasing: j. Decreasing:

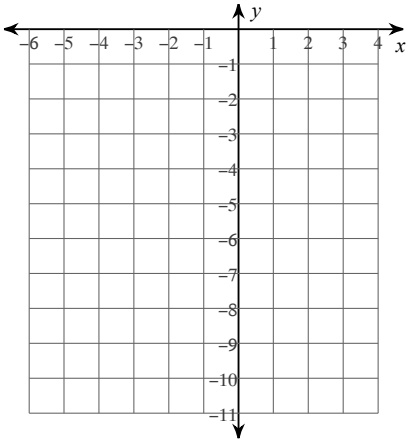
k. Positive: l. Negative:

l. End behavior:

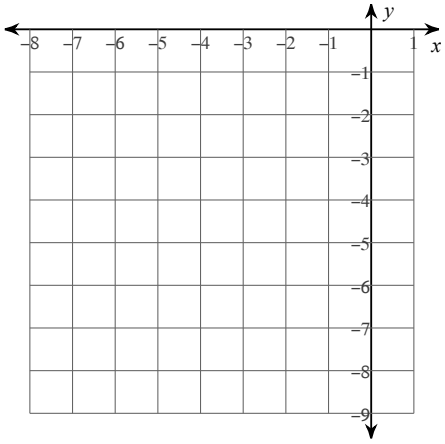
13) $y = 2(x+4)^2 + 2$



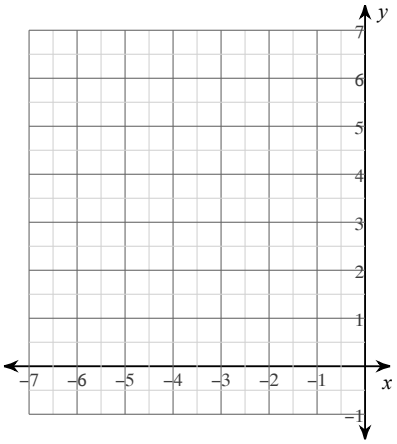
14) $f(x) = -2(x-2)^2 - 2$



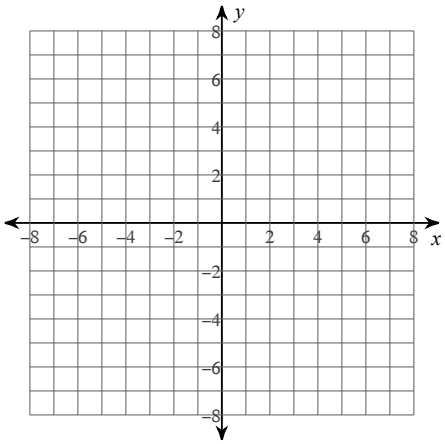
15) $y = -(x+4)^2 - 4$



16) $y = \frac{1}{2}(x+4)^2 + 3$



17) $y = x(x+4)$



18) a. x-intercept(s):

b. y-intercept:

c. axis of symmetry:

d. vertex:

e. Max/Min Value:

f. Direction of opening:

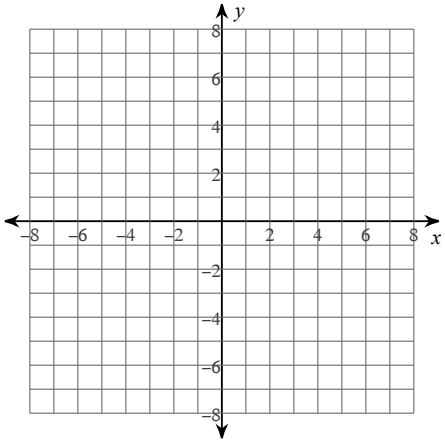
g. Domain: h. Range:

i. Increasing: j. Decreasing:

k. Positive: l. Negative:

l. End behavior:

19) $y = -(x+6)(x+2)$



20) a. x-intercept(s):

b. y-intercept:

c. axis of symmetry:

d. vertex:

e. Max/Min Value:

f. Direction of opening:

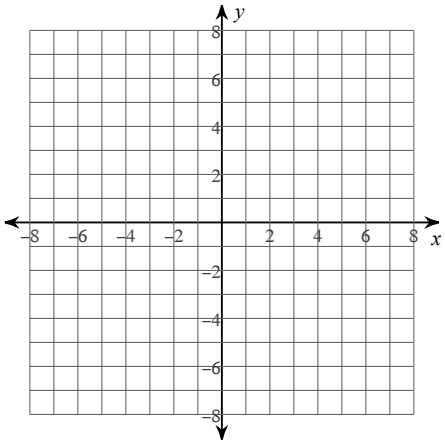
g. Domain: h. Range:

i. Increasing: j. Decreasing:

k. Positive: l. Negative:

l. End behavior:

21) $f(x) = 2(x-4)(x-2)$



22) a. x-intercept(s):

b. y-intercept:

c. axis of symmetry:

d. vertex:

e. Max/Min Value:

f. Direction of opening:

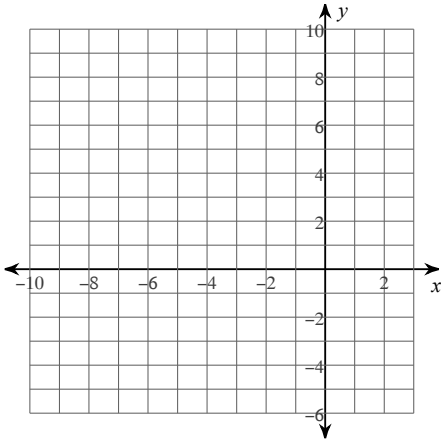
g. Domain: h. Range:

i. Increasing: j. Decreasing:

k. Positive: l. Negative:

l. End behavior:

23) $y = -(x + 8)(x + 2)$



24) a. x-intercept(s):

b. y-intercept:

c. axis of symmetry:

d. vertex:

e. Max/Min Value:

f. Direction of opening:

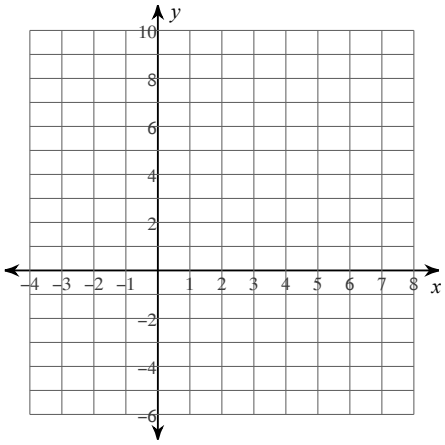
g. Domain: h. Range:

i. Increasing: j. Decreasing:

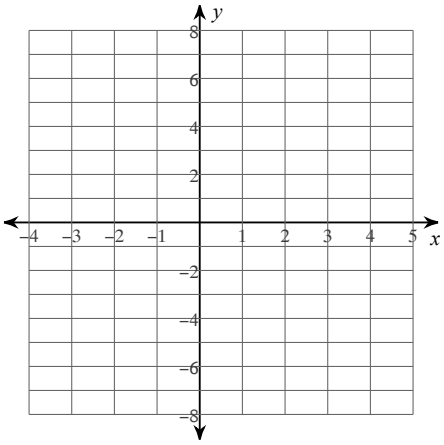
k. Positive: l. Negative:

l. End behavior:

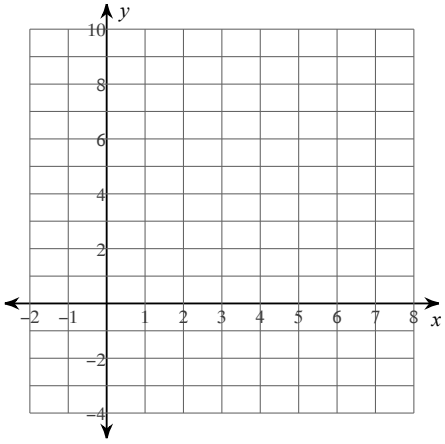
25) $f(x) = -x(x - 6)$



26) $y = 2(x + 1)(x - 3)$



27) $y = 3(x - 3)(x - 5)$



28) $f(x) = -\frac{1}{2}(x + 5)(x + 1)$