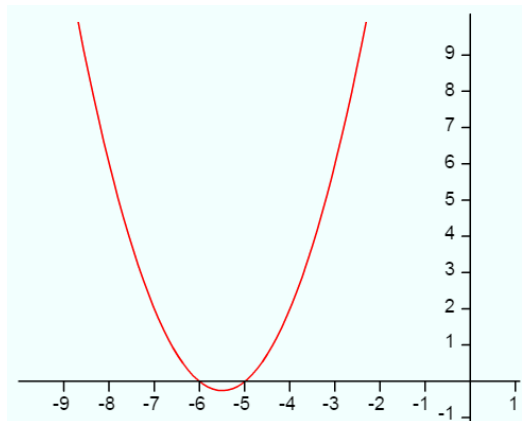


Warm-up 3/13/17

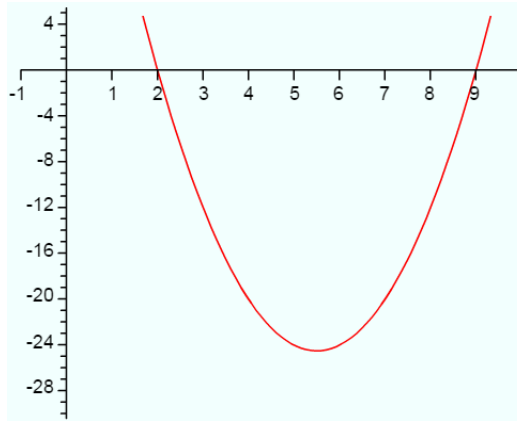
Use the graphs to write each function in factored form.

$$f(x) = x^2 + 11x + 30$$



$$(x+5)(x+6)$$

$$g(x) = 2x^2 - 22x + 36$$



$$2(x-2)(x-9)$$

Pg. 902

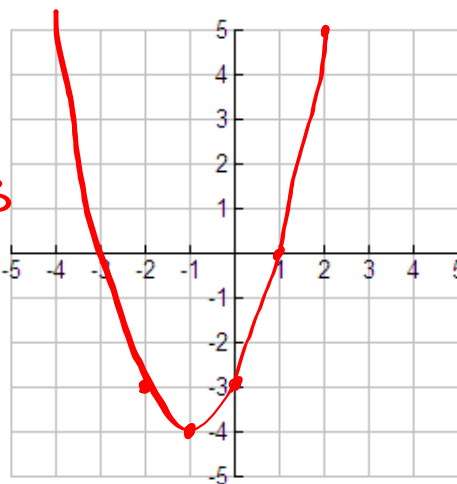
1a

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

x	f(x)
-2	-3
-1	-4
0	-3
1	0
2	5

$$(-2)^2 + 2(-2) - 3$$

$$4 - 4 - 3$$



Parabola Opens: uP

zero(s): (1, 0) (-3, 0)

Vertex: (-1, -4)

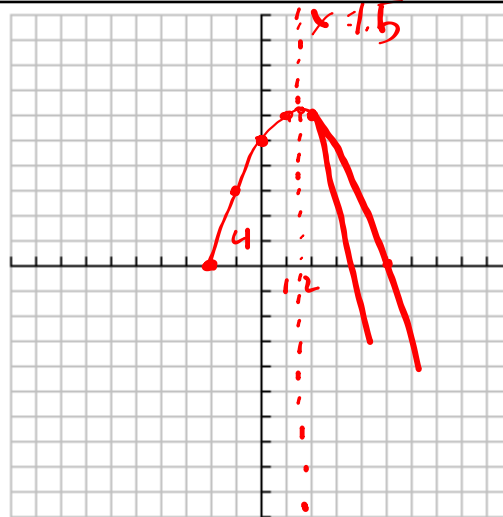
y-intercept: (0, -3)

Pg. 903

1b

$$f(x) = -2x^2 + 6x + 20$$

x	f(x)
-2	0
-1	12
0	20
1	24
2	24



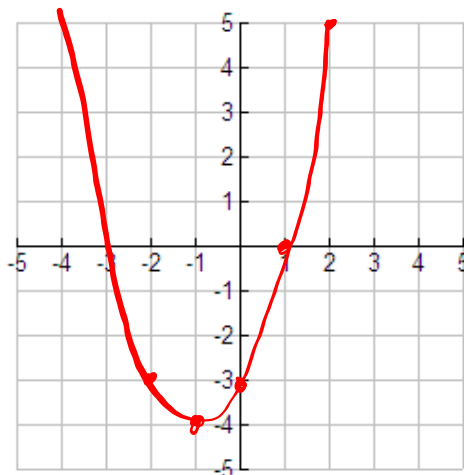
Parabola Opens: **down** zero(s): **$(-2, 0)$ $(5, 0)$**
 Vertex: **$(1.5, 24.5)$** y-intercept: **$(0, 20)$**

Pg. 904

3a

$$f(x) = (x-1)(x+3)$$

x	f(x)
-2	-3
-1	-4
0	-3
1	0
2	5



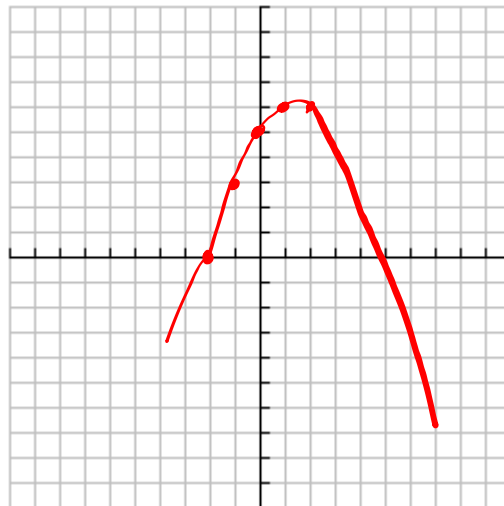
Parabola Opens: **UP** zero(s): **$(-3, 0)$ $(1, 0)$**
 Vertex: **$(-1, -4)$** y-intercept: **$(0, -3)$**

Pg. 905

3b

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

x	f(x)
-2	0
-1	12
0	20
1	24
2	24



Parabola Opens: **down** zero(s): **$(-2, 0)$ $(5, 0)$**

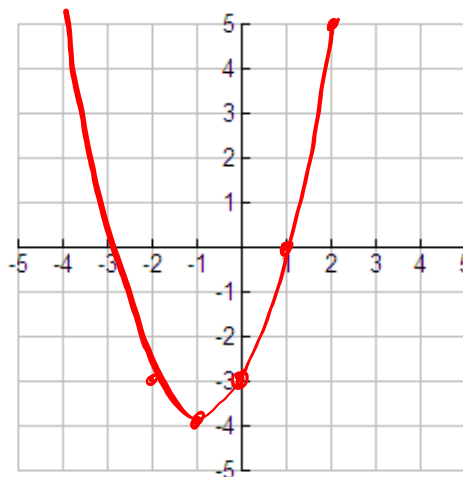
Vertex: **$(1.5, 24.5)$** y-intercept: **$(0, 20)$**

Pg. 906

6a

$$f(x) = (x+1)^2 - 4$$

x	f(x)
-2	-3
-1	-4
0	-3
1	0
2	5



Parabola Opens: **up** zero(s): **$(-3, 0)$ $(1, 0)$**

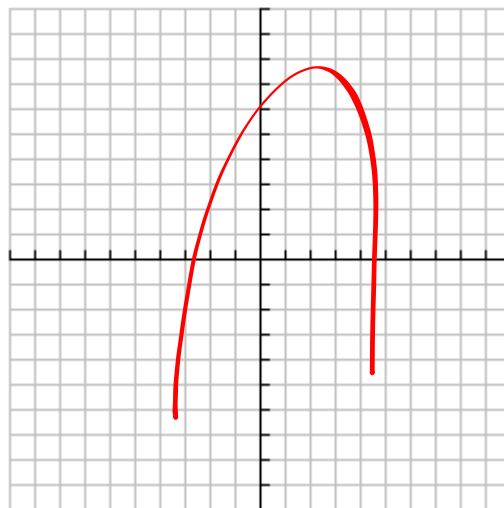
Vertex: **$(-1, -4)$** y-intercept: **$(0, -3)$**

Pg. 907

6b

$$f(x) = -2(x - 1.5)^2 + 24.5$$

x	f(x)
-2	0
-1	12
0	20
1	24
2	24



Parabola Opens: *down* zero(s): *(-2, 0) (5, 0)*

Vertex: *(1.5, 24.5)* y-intercept: *(0, 20)*

Standard Form

$$f(x) = ax^2 + bx + c$$

y-intercept: (0, c)

a > 0 opens up

a < 0 opens down

Factored Form

$$f(x) = a(x - r_1)(x - r_2)$$

x-intercepts: (r₁, 0), (r₂, 0)

or zeros

Vertex Form

$$f(x) = a(x - h)^2 + k$$

vertex: (h, k)

Pg. 910

3

$$x^2 - 5 = x^2 + 0x - 5 = (x - 0)^2 - 5$$

$(0, -5) \qquad \qquad (0, -5)$