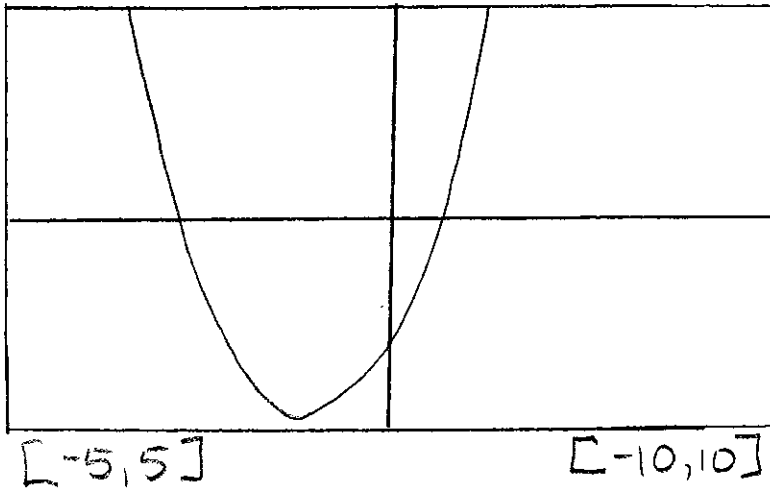


# Pre-Calculus Math 11

3. page 174 #3, 4a, b, 5  
 a)  $f(x) = 5x(10 - 2x)$   
 $f(x) = 50x - 10x^2$

b)  $f(x) = (10 - 3x)(4 - 5x)$   
 $f(x) = 40 - 50x - 12x + 15x^2$   
 $f(x) = 15x^2 - 62x + 40$

5. a)

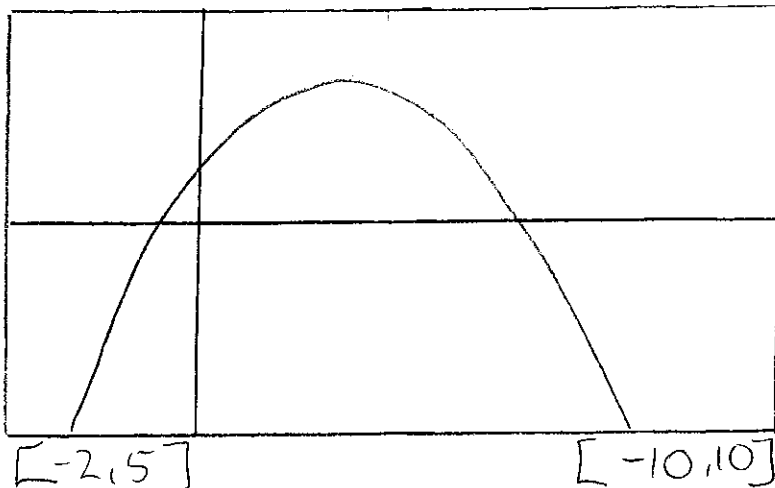


$$y = 3x^2 + 7x - 6$$

- ① vertex:  $(-1.2, -10.1)$
- ② axis of sym:  $x = -1.2$
- ③ opens: up
- ④ min:  $-10.1$
- ⑤ domain:  $\mathbb{R}$
- ⑥ range:  $y \geq -10.1$
- ⑦ x-intercepts:  $-3, -0.7$
- ⑧ y-intercept:  $-6$

- ① use "2nd" "calc" then select "3: minimum" to get the vertex
- ② ④ ⑥ get these from the vertex
- ③ from equation (3 is positive)
- ⑤ all quadratics are  $\mathbb{R}$
- ⑦ use "2nd" "calc" then select "2: zero" to get first one x-intercept then repeat for the second
- ⑧ from the equation ( $-6$  is the constant)

b)



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

vertex:  $(1.3, 6.1)$   
 axis of sym:  $x = 1.3$   
 opens: down  
 max:  $6.1$   
 domain:  $\mathbb{R}$   
 range:  $y \leq 6.1$   
 x-intercepts:  $-0.5, 3$   
 y-intercept:  $3$

page 174 cont.

4. a)  $f(x) = x^2 - 2x - 3$

x	y
0	-3
1	-4
2	-3
3	0
4	5

} symmetrical  
use symmetry to finish

b)  $f(x) = -x^2 + 16$

x	y
0	16
1	15
2	12
3	7
4	0
5	-9
-1	15
-2	12

finish using symmetry

a) vertex: (1, -4)

axis of sym:  $x=1$

opens: up

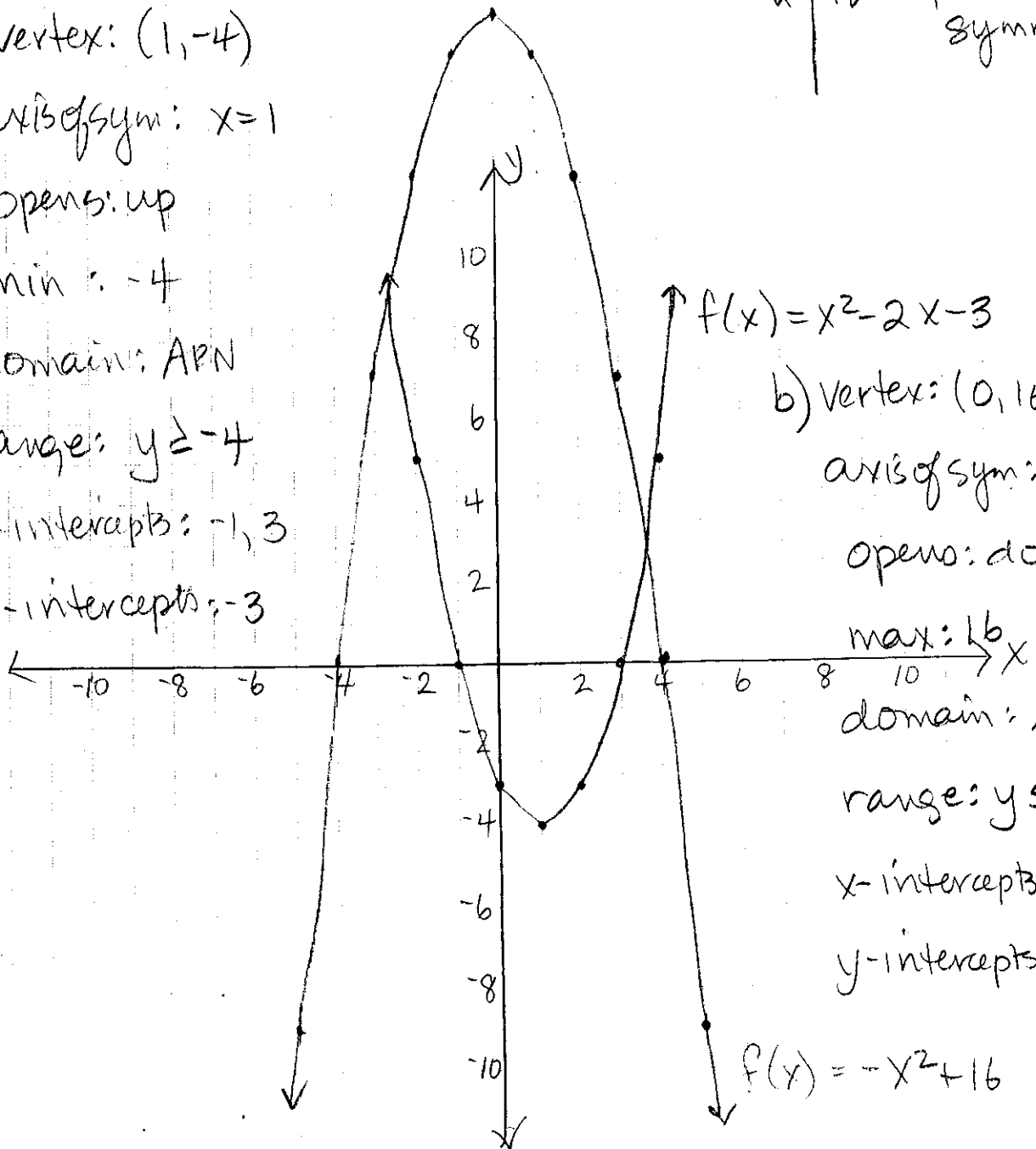
min: -4

domain:  $\mathbb{R}$

range:  $y \geq -4$

x-intercepts: -1, 3

y-intercept: -3



b) vertex: (0, 16)

axis of sym:  $x=0$

opens: down

max: 16

domain:  $\mathbb{R}$

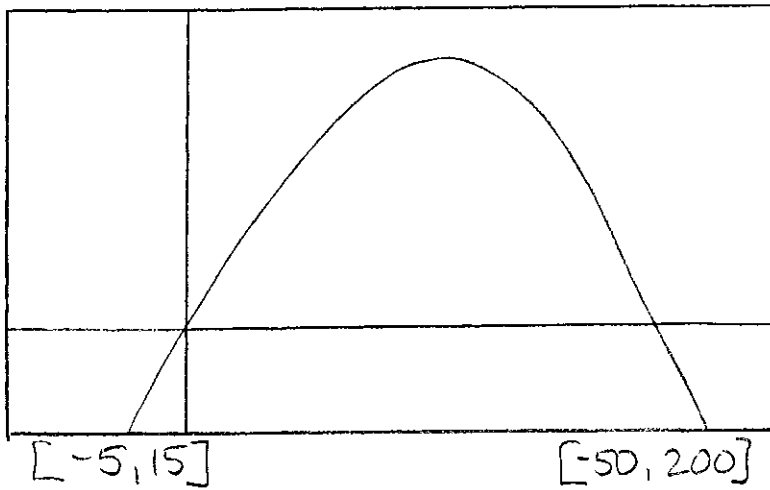
range:  $y \leq 16$

x-intercepts: -4, 4

y-intercept: 16

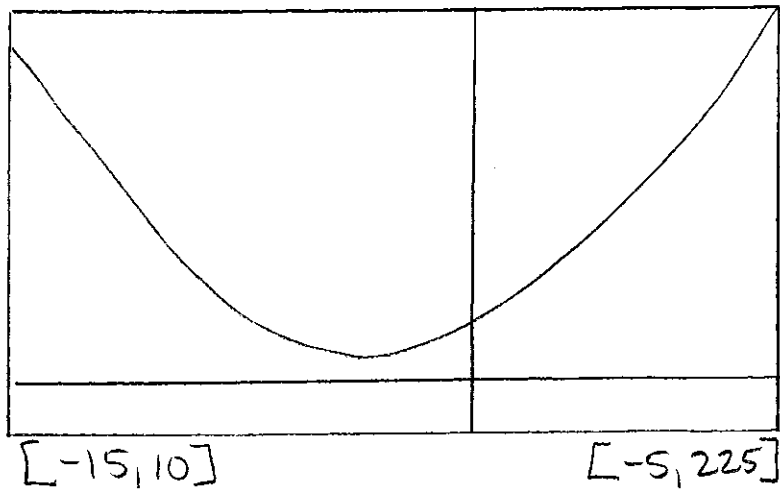
$f(x) = -x^2 + 16$

5. page 174 cont.  
c)



$y = 50x - 4x^2$   
Vertex:  $(6.2, 156.3)$   
axis of sym:  $x = 6.2$   
opens: down  
max: 156.3  
domain: ARN  
range:  $y \leq 156.3$   
x-intercept: 0, 12.5  
y-intercept: 0

d)



$y = 1.2x^2 + 7.7x + 24.3$   
Vertex:  $(-3.2, 11.9)$   
axis of sym:  $x = -3.2$   
opens: up  
min: 11.9  
domain: ARN  
range:  $y \geq 11.9$   
x-intercept: none  
y-intercept: 24.3

don't put  
"0"