

8-9 Review pgs 508-509 1-4, 9, 10, 12, 15, 16

- #1 A 2 parabolas with (0,1) ∴ (c)  
 B  $y=x$  line through (0,0) ∴ (a)  
 C 2 parabolas  $y_{int}$  (0,1) (0,4) ∴ (d)  
 D  $y=x+4$  line through (0,4) ∴ (b)

#2  $y=4-3x$   $4-3x = x^2-3x-1$   
 $y=x^2-3x-1$   $0 = x^2-5$   
 $x^2=5$   
 $x = \pm\sqrt{5}$   $(\sqrt{5}, 4-3\sqrt{5})$   $(2.2, -2.7)$   
 $(-\sqrt{5}, 4+3\sqrt{5})$   $(-2.2, 10.7)$

#3 a)  $y = -x^2+4x+1$   $-x^2+4x+1 = 3x-1$   
 $3x-1 = y$   $0 = x^2-x-2$   
 $0 = (x-2)(x+1)$   
 $x=2$   $x=-1$   
 $(2, 5)$   $(-1, -4)$

b) 2 points where the line crosses the parabola

#4  $x^2+4 = x+b$   $b^2-4ac$   
 $x^2-x+4-b = 0$   $1-4(1)(4-b)$   
 $1-16+4b$   
 $4b-15$   
 a)  $4b-15 > 0$  b)  $4b-15 = 0$  c)  $4b-15 < 0$   
 $b > 15/4$   $b = 15/4$   $b < 15/4$

#9  $-2x^2+6x-1 = -4x^2+4x+2$   
 $2x^2+2x-3 = 0$   
 $x = \frac{-2 \pm \sqrt{4+24}}{4}$   $(\frac{-1+\sqrt{7}}{2}, )$   
 $x = \frac{-2 \pm 2\sqrt{7}}{4}$   $(\frac{-1-\sqrt{7}}{2}, )$   
 $x = \frac{-1 \pm \sqrt{7}}{2}$   $(.82, 2.58)$   
 $(-1.82, -18.58)$

#10 a)  $2x^2 + 9x - 5 = 2x^2 - 4x + 8$

$13x = 13$

$x = 1$

$y = 2 - 4 + 8$

$(1, 6)$

b)  $12x^2 + 17x - 5 = -x^2 + 30x - 5$

$13x^2 - 13x = 0$

$13x(x - 1) = 0$

$x = 0$

$x = 1$

$(0, -5)$

$(1, 24)$

#12 a)  $y > x^2 + 1$

b)  $y \geq -(x+3)^2 + 2$

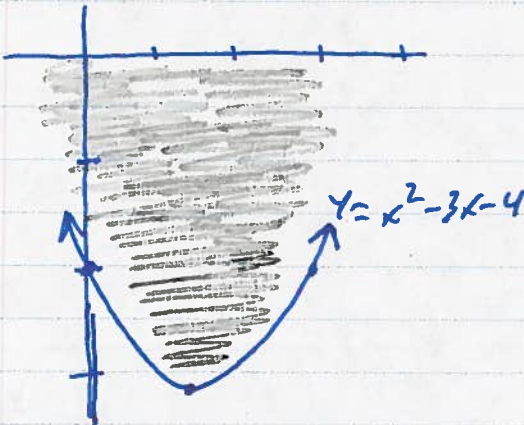
#15 boundary  $y = x^2 - 3x - 4$

vertex  $(\frac{3}{2}, -\frac{25}{4})$

$(1.5, -6.25)$

y-int  $(0, -4)$

$\therefore (3, -4)$



check  $(0, 0) \quad 0 > -4 \checkmark$

#16  $2x^2 + 9x - 35 \geq 0$

$(2x - 5)(x + 7)$



$(-\infty, -7] \cup [2.5, \infty)$

OR

$x \leq -7 \text{ OR } x \geq 2.5$

Hilroy