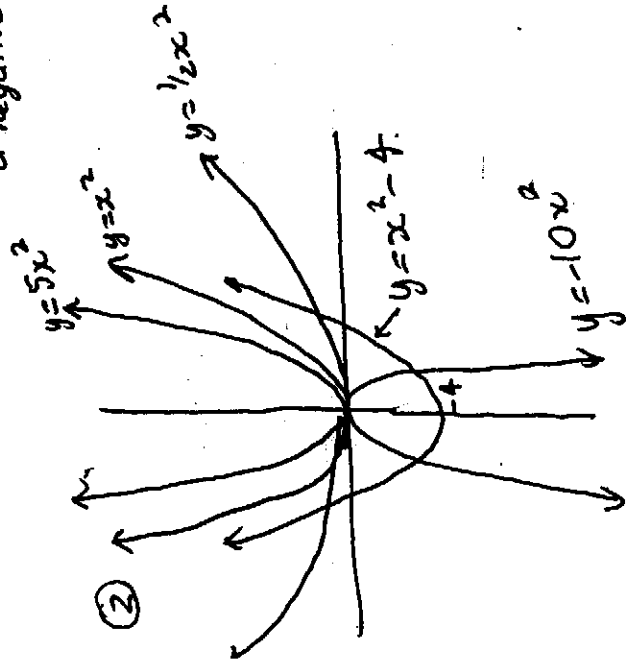


# Alg I Answers to Ch 10 Review

①  $y = -3x^2$  (or anything with a negative 'a')



③ a)  $\uparrow$  min

b)  $\downarrow$  max

c)  $\uparrow$  min

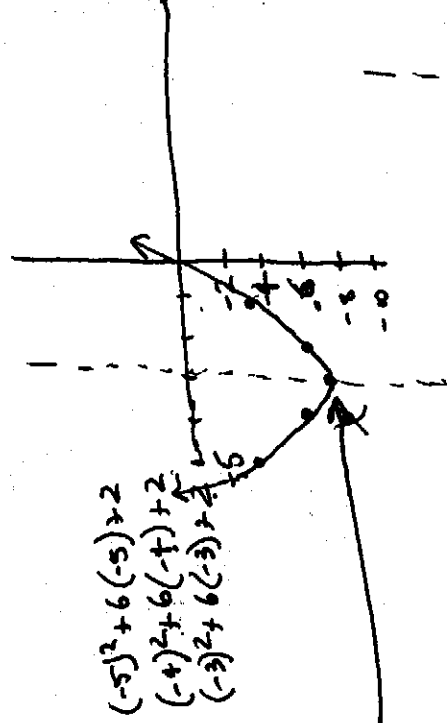
④ a)  $y = x^2 + 6x + 2$

$$x = -b/2a$$

$$= -6/2$$

$$= -3$$

$$\text{Vertex} = (-3, -7)$$



$$(-5)^2 + 6(-5) + 2$$

$$(-4)^2 + 6(-4) + 2$$

$$(-3)^2 + 6(-3) + 2$$

b)  $y = -2x^2 + 4x - 3$

$$x = -b/2a$$

$$= -4/-4$$

$$= 1$$

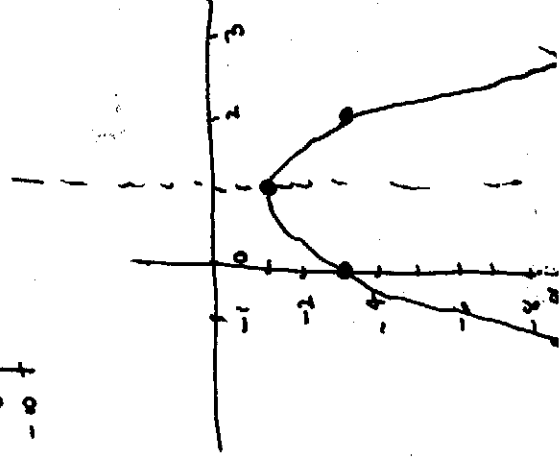
$$\text{Vertex} = (1, -1)$$

x	y
-1	-9
0	-3
1	-1
2	-3
3	-9

$$-2(-1)^2 + 4(-1) - 3$$

$$-2(0)^2 + 4(0) - 3$$

$$-2(1)^2 + 4(1) - 3$$



5) a)  $2x^2 = 8$

$x^2 = 4$

$x = \pm 2$

b)  $x^2 - 10 = 3$

$x^2 = 13$

$x = \pm \sqrt{13}$

c)  $9x^2 = 4$

$x^2 = 4/9$

$x = \pm 2/3$

6)

a)  $x^2 + 7x + 12 = 0$

$(x+4)(x+3) = 0$

$x = -4, -3$

b)  $5x^2 - 10x = 0$

$5x(x-2) = 0$

$5x = 0, x - 2 = 0$

$x = 0, x = 2$

c)  $x^2 - 5x + 4 = 0$

$(x-4)(x-1) = 0$

$x = 4, 1$

d)  $2x^2 + 5x - 3 = 0$  (write in standard form first)

$2x^2 + 6x - 1x - 3 = 0$

$2x(x+3) - 1(x+3) = 0$

$(2x-1)(x+3) = 0$

$2x-1=0, x+3=0$

$x = 1/2, x = -3$

7)

a)  $4x^2 + 3x - 8 = 0$

$a=4, b=3, c=-8$

$x = \frac{-3 \pm \sqrt{3^2 - 4 \cdot 4 \cdot (-8)}}{8}$

$= \frac{-3 \pm \sqrt{137}}{8}$

$= \frac{-3 \pm 11.7}{8}$

$= -1.8, 1.9$

b)  $-x^2 + 8x - 1 = 0$

$a=-1, b=8, c=-1$

$x = \frac{-8 \pm \sqrt{8^2 - 4(-1)(-1)}}{-2}$

$= \frac{-8 \pm \sqrt{68}}{-2}$

$= \frac{-8 \pm 8.2}{-2}$

$= 8.1, -0.1$

c)  $x^2 + 2x + 6 = 0$

$a=1, b=2, c=6$

$x = \frac{-2 \pm \sqrt{2^2 - 4 \cdot 1 \cdot 6}}{2}$

NO solution

$b^2 - 4ac < 0$

8)

$4x^2 + 12x + 9 = 0$

$a=4, b=12, c=9$

discriminant  $b^2 - 4ac$

$= 12^2 - 4 \cdot 4 \cdot 9$

$= 0$

so 1 solution

Rules If  $b^2 - 4ac < 0 \rightarrow$  No solution

If  $b^2 - 4ac = 0 \rightarrow$  1 solution

If  $b^2 - 4ac > 0 \rightarrow$  2 solutions.