

Brian Klee  
Alg II-1  
5.1 Practice B

1)  $y = -x^2 - 2x + 3$   
Opens DOWN

4)  $y = x^2 - 4x + 8$   
 $y = x(x-4) + 8$   
 $x = 0, 4$  intercepts

$\frac{0+4}{2} = 2 \leftarrow$  vertex "x"  
 $y = 2(2-4) + 8 = 4 \leftarrow$  vertex "y"

Vertex: 2, 4  
Axis of Symmetry:  $x = 2$

2)  $y = 3x^2 + 3x - 4$   
Opens UP

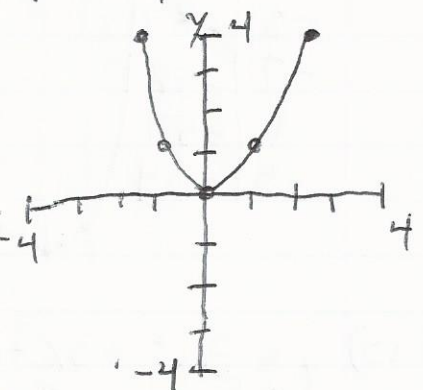
5)  $y = -3x^2 + x$   
 $y = (-3+x)x$

$x = 0, 3$  intercepts

$\frac{0+3}{2} = 1.5 \leftarrow$  vertex "x"  
 $y = -3(1.5)^2 + 1.5 = -5.25$

$y = \frac{1}{6}(-3(\frac{1}{6}) + 1)$   
 $y = \frac{1}{12}$  Vertex

Vertex:  $\frac{1}{6}, \frac{1}{12}$   
Axis of Symmetry:  $x = \frac{1}{6}$



7)  $y = x^2$

x	y
-2	4
-1	1
0	0
1	1
2	4

6)  $y = x^2 - x + 4$

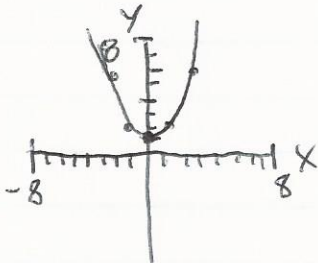
$y = x(x-1) + 4$   
 $x = 0, 1$   $\frac{0+1}{2} = \frac{1}{2}$  Vertex "x"

$y = (.5)^2 - (.5) + 4$   
 $y = 3.75 = \frac{15}{4}$  Vertex "y"

Vertex:  $\frac{1}{2}, \frac{15}{4}$ , Axis of Symmetry  $x = \frac{1}{2}$

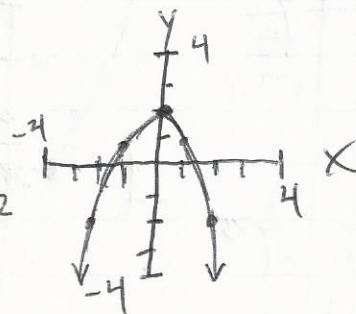
8)  $y = x^2 + 1$

x	y
-2	5
-1	2
0	1
1	2
2	5



9)  $y = -x^2 + 2$

x	y
-2	$-(-2)^2 + 2 = -2$
-1	$-(-1)^2 + 2 = 1$
0	$-(0)^2 + 2 = 2$
1	$-(1)^2 + 2 = 1$
2	$-(2)^2 + 2 = -2$



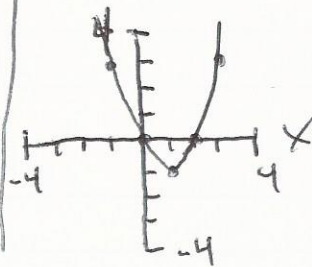
10)  $y = x^2 - 2x$   
 $y = x(x-2)$

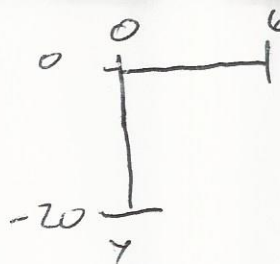
x-int: 0, 2  
Vertex "x" =  $\frac{0+2}{2} = 1$

Vertex "y" =  $(1)^2 - 2(1) = -1$

1, -1

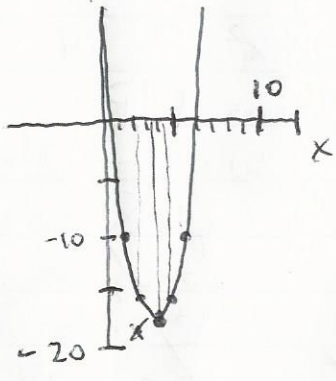
x	y
-1	3
0	0
1	-1
2	0
3	3





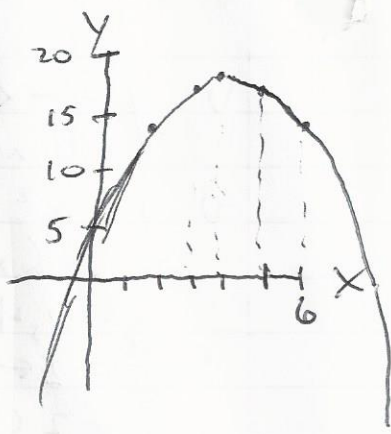
11) Calculator  
 $y = 2x^2 - 12x$

x	y
1	-10
2	-16
3	-18
4	-16
5	-10



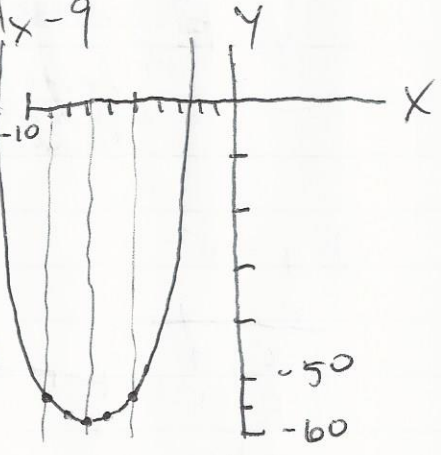
12) Calculator  
 $y = -x^2 + 8x + 2$

x	y
2	14
3	17
4	18
5	17
6	14



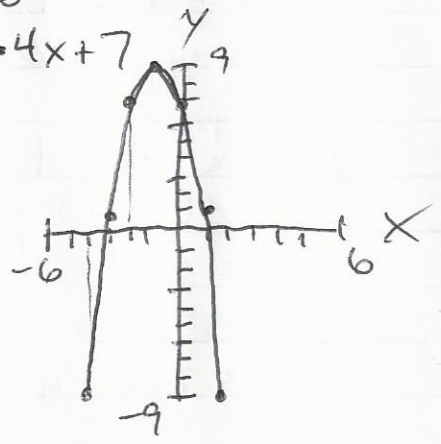
13) Calculator  
 $y = x^2 + 14x - 9$

x	y
-9	-54
-8	-57
-7	-58
-6	-57
-5	-54



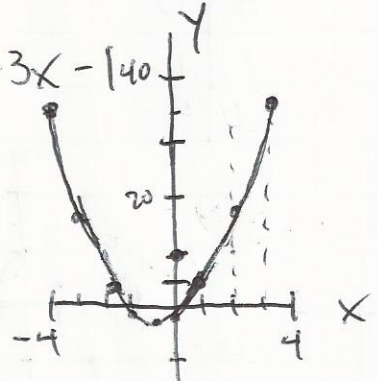
14) Calculator  
 $y = -2x^2 + 4x + 7$

x	y
-4	-9
-3	1
-2	7
-1	9
0	7
1	1
2	-9



15)  $y = 3x^2 + 3x - 140$

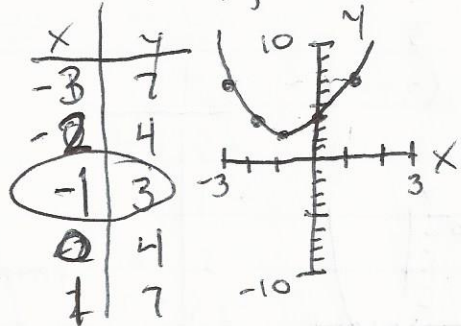
x	y
-4	35
-3	17
-2	5
-1	-1
-1.5	-1.75
0	-1
1	5
2	17
3	35



Vertex  
 $x = -0.5$   
 $y = -1.75$

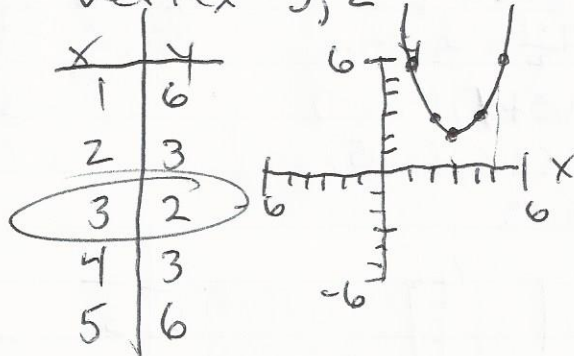
16)  $y = (x+1)^2 + 3$

Vertex  $-1, 3$



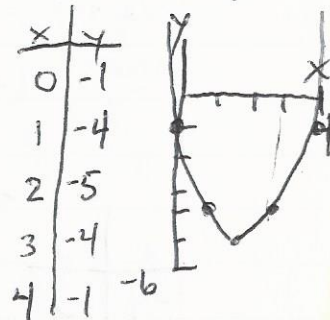
17)  $y = (x-3)^2 + 2$

Vertex  $3, 2$



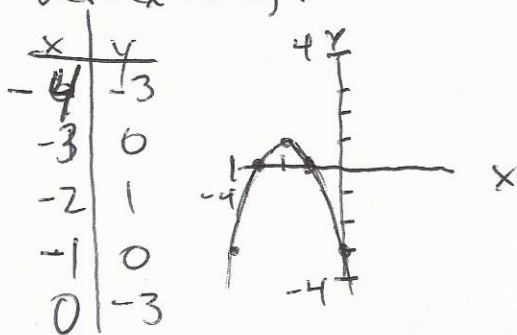
18)  $y = (x-2)^2 - 5$

Vertex  $2, -5$



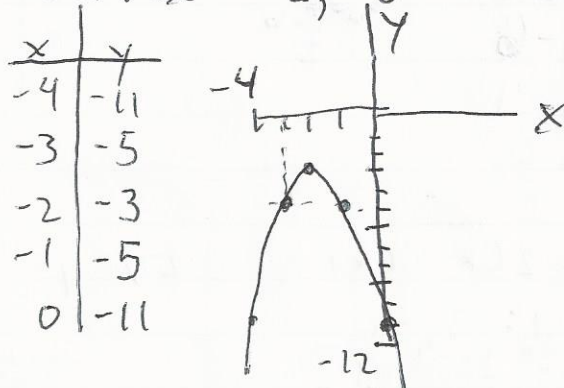
19)  $y = -(x+2)^2 + 1$

Vertex:  $-2, 1$



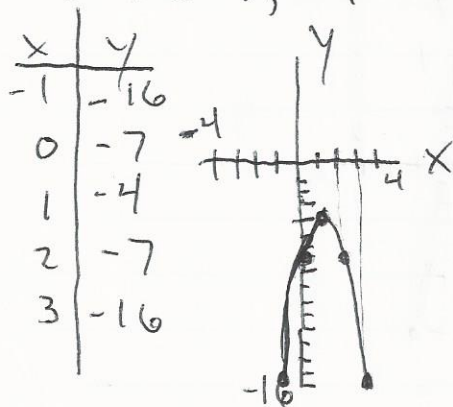
20)  $y = -2(x+2)^2 - 3$

Vertex:  $-2, -3$

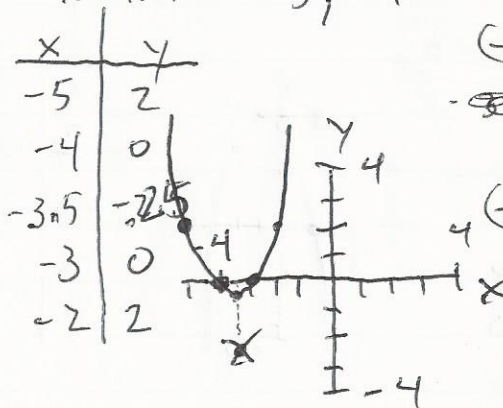


21)  $y = -3(x-1)^2 - 4$

Vertex:  $1, -4$



22)  $y = (x+3)(x+4)$   
x-int:  $-3, -4$



Vertex "x"  
 $\frac{-3 + -4}{2} = -3.5$

$(-3.5 + 3)(-3.5 + 4)$

$(-0.5)(0.5)$

$= -0.25$

$(-5 + 3)(-5 + 4)$

$(-2)(-1)$

$= 2$

$$\begin{array}{r} 25 \\ \cdot 25 \\ \hline 125 \\ 500 \\ \hline 525 \end{array}$$

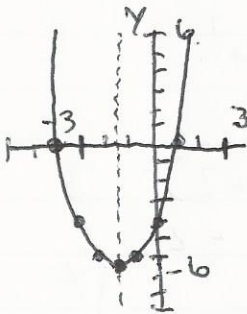
$$\begin{array}{r} 215 \\ 15 \\ \hline 75 \\ 150 \\ \hline 225 \end{array}$$

$$\begin{aligned} - (1.5)(-1.5) &= + \\ -(-2.5+4)(-2.5+1) & \\ -(-2+4)(-2+1) & \end{aligned}$$

23)  $y = (x+4)(x-1)$

x-int:  $x = -4, 1$   
 Vertex "x":  $\frac{-4+1}{2} = -\frac{3}{2} = -1.5$   
 Vertex "y":  $(-1.5+4)(-1.5-1) = (2.5)(-2.5) = -5.25$

x	y
-4	0
-3	-4
-2	-6
-1.5	-5.25
-1	-6
0	-4
1	0

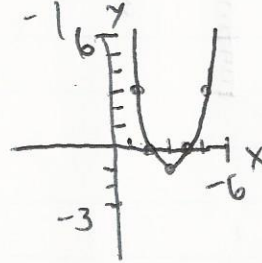


$$\begin{aligned} (1-2)(1-4) \\ (-1)(-3) \end{aligned}$$

24)  $y = (x-2)(x-4)$

x-int:  $2, 4$   
 Vertex "x":  $\frac{2+4}{2} = 3$   
 Vertex "y":  $(3-2)(3-4) = (1)(-1) = -1$

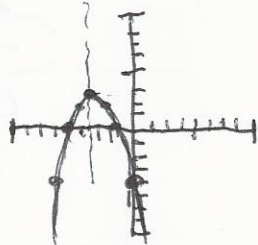
x	y
1	3
2	0
3	-1
4	0
5	3



25)  $y = -(x+4)(x+1)$

x-int:  $x = -4, -1$   
 Vertex "x":  $\frac{-4+(-1)}{2} = -\frac{5}{2} = -2.5$

x	y
-5	-4
-4	0
-3	2
-2.5	2.25
-2	2
-1	0
0	-4

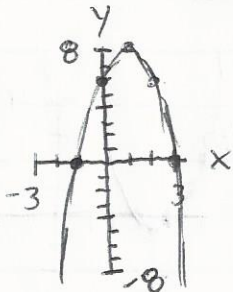


26)  $y = -2(x-3)(x+1)$

x-int:  $3, -1$   
 Vertex "x":  $\frac{3+(-1)}{2} = 1$   
 Vertex "y":  $-2(1-3)(1+1) = -2(-2)(2) = -8$

$y = -8$

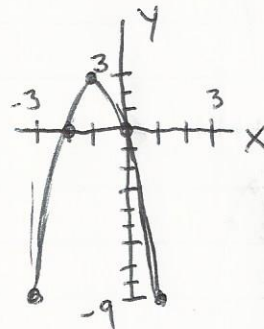
x	y
-1	0
0	6
1	-8
2	6
3	0

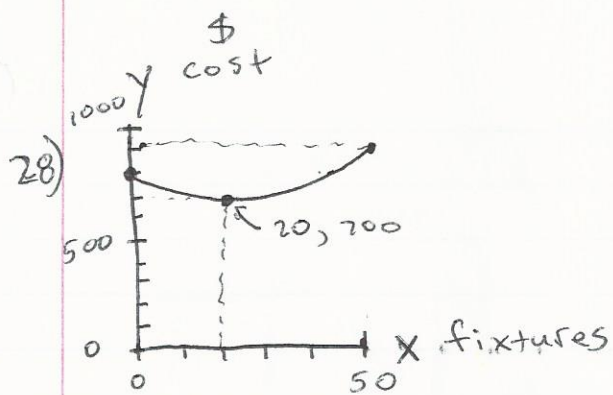


27)  $y = -3x(x+2)$

x-int:  $0, -2$   
 Vertex "x":  $\frac{0+(-2)}{2} = -1$   
 Vertex "y":  $-3(-1)(-1+2) = -3(-1)(1) = 3$

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





29) \$ 700 is min production cost

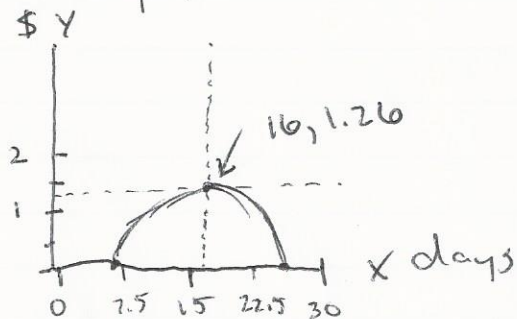
30) 20 fixtures produced will yield that production cost of \$700

31) March 16<sup>th</sup>

Table:

X	Y
14	1.20
15	1.25
16	1.26
17	1.25
18	1.20

Graph



32) \$ 1.26