

23E

1) $[3X^2 + 3Y^2 = 75] \div 3 \Rightarrow (X - 0)^2 + (Y - 0)^2 = 5^2$
 $C = (0, 0)$ $R = 5$

2) on the graph

3) $(X - 2)^2 + (Y + 2)^2 = 2^2$

4) on the graph

5) $X^2 + 2X + 1 + Y^2 + 2Y + 1 = 34 + 2$
 $(X + 1)^2 + (Y + 1)^2 = 6^2$
 $C = (-1, -1)$ $R = 6$

6) on the graph

7) $9X^2 + 25Y^2 = 225$, center = $(0, 0)$

8) $Y = 0 \Rightarrow 9X^2 = 225$
 $X^2 = 25 \Rightarrow X = \pm 5$

9) $X = 0 \Rightarrow 25Y^2 = 225$
 $Y^2 = 9 \Rightarrow Y = \pm 3$

10) on the graph

11) $AC^2 = 9 + 9 = 18$
 $AC = \sqrt{18} = 3\sqrt{2}$

12) $BC^2 = 9 + 36 = 45$
 $BC = \sqrt{45} = 3\sqrt{5}$

13) $\left(\frac{3+0}{2}\right), \left(\frac{6+0}{2}\right) = \left(\frac{3}{2}, 3\right)$

14) $\left(\frac{3+6}{2}\right), \left(\frac{6+3}{2}\right) = \left(\frac{9}{2}, \frac{9}{2}\right)$

15) $2Y = -2X - 3 \Rightarrow Y = -X - 3/2$
 $Y = -X + b \Rightarrow (4) = -(-2) + b$
 $2 = b$ $Y = -X + 2$

16) on the graph

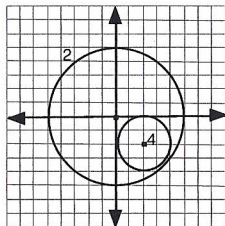
17) $m = -3$ so perpendicular is $1/3$
 $Y = 1/3 X + b \Rightarrow (3) = 1/3(1) + b$
 $2 2/3 = b$ $Y = 1/3 X + 2 2/3$

18) on the graph
 $5Y \leq -4X \Rightarrow Y \leq -4/5 X$

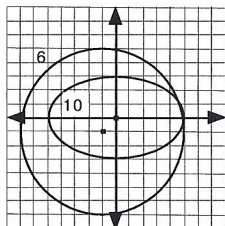
19) $(-2) \leq -4/5(-2)$ $(2) \leq -4/5(2)$
 $-2 \leq 8/5$ yes $2 \leq -8/5$ no

20) solid, on the graph

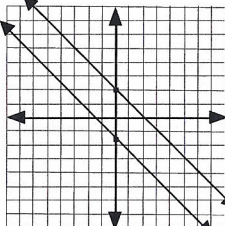
#2 & 4



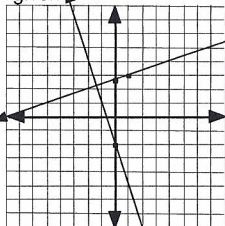
#6 & 10



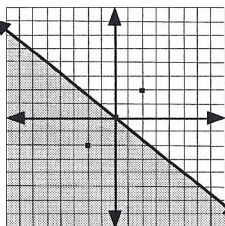
#16



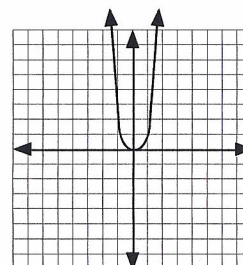
#18



#19 & 20

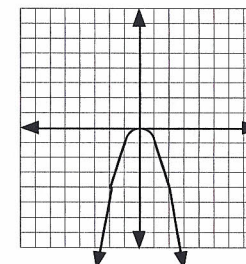


24A



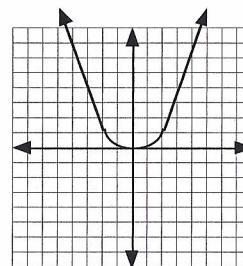
1) $Y = 3X^2$

X	Y
0	0
1	3
-1	3
2	12
-2	12



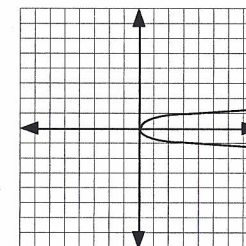
2) $Y = -X^2$

X	Y
0	0
1	-1
-1	-1
2	-4
-2	-4



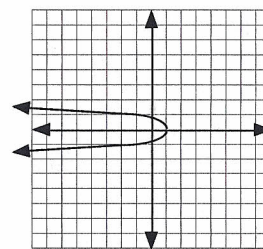
3) $Y = 1/3 X^2$

X	Y
0	0
1	1/3
-1	1/3
2	4/3
-2	4/3



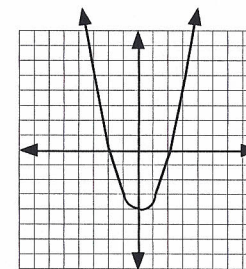
4) $X = 4Y^2$

X	Y
0	0
4	1
4	-1
16	2
16	-2



5) $X = -3Y^2 + 1$

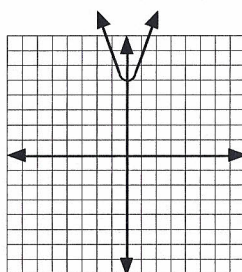
X	Y
1	0
-2	1
-2	-1
-11	2
-11	-2



6) $Y = X^2 - 4$

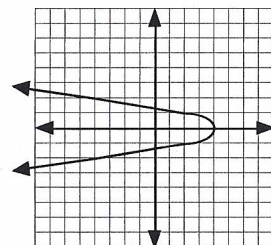
X	Y
0	-4
1	-3
-1	-3
2	0
-2	0

24B



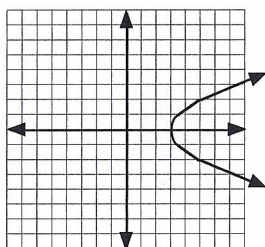
X	Y
0	5
1	7
-1	7
2	13
-2	13

1) $Y = 2X^2 + 5$



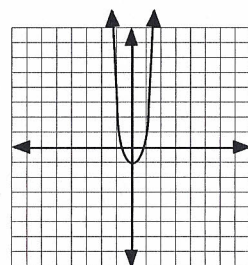
X	Y
4	0
2	1
2	-1
-4	2
-4	-2

2) $2X = -4Y + 8$
 $X = -2Y^2 + 4$



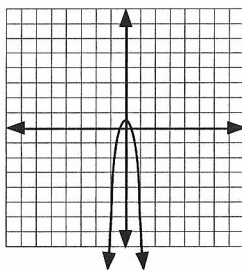
X	Y
3	0
7/2	1
7/2	-1
5	2
5	-2

3) $X = 1/2 Y^2 + 3$



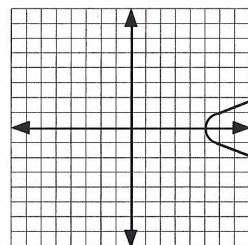
X	Y
0	-1
1	2
-1	2
2	11
-2	11

4) $3X^2 = Y + 1$
 $Y = 3X^2 - 1$



X	Y
0	.5
1	-5.5
-1	-5.5
2	-23.5
-2	-23.5

5) $Y = -6X^2 + 1/2$



X	Y
5	0
6	1
6	-1
9	2
9	-2

6) $X = Y^2 + 5$

24C

1-2)

X	Y
0	-3
1	-2
-1	-2
2	1
-2	1

see graph

3-4)

X	Y
0	4
1	1
-1	1
2	-8
-2	-8

see graph

5) 1

6) -2

7) $1/2$

8) 1

9) $[2X^2 + 2Y^2 = 8] \div 2 \Rightarrow X^2 + Y^2 = 4$
 $(X - 0)^2 + (Y - 0)^2 = 2^2$
 $C = (0, 0) \quad R = 2$

10) on the graph

11) $(X - 1)^2 + (Y + 1)^2 = 3^2$
 $(X - 1)^2 + (Y + 1)^2 = 9$

12) on the graph

13) (0, 0)

14) $X = 0 \Rightarrow Y^2 = 9 \quad Y = 0 \Rightarrow X^2 = 4$
 $Y = \pm 3 \quad X = \pm 2$

15) $AB^2 = (4 - 2)^2 + [4 - (-1)]^2 = 29$
 $AB = \sqrt{29}$

16) $BC^2 = (-1 - 4)^2 + (2 - 4)^2 = 29$
 $BC = \sqrt{29}$

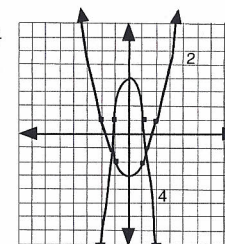
17) $(-\frac{2-1}{2}), (-\frac{-1+2}{2}) = (-\frac{1}{2}, \frac{1}{2})$

18) $(-\frac{2+4}{2}), (-\frac{-1+4}{2}) = (-3, 1\frac{1}{2})$

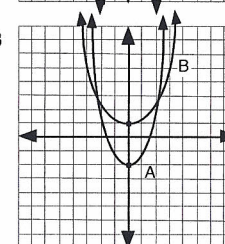
19) $2Y = -2/3 X + 1 \Rightarrow Y = -1/3 X + 1/2$
 $m = -1/3$ so perpendicular is 3
 $Y = 3X + b \Rightarrow (3) = 3(2) + b$
 $-3 = b \quad Y = 3X - 3$

20) $5Y > 3X + 5 \Rightarrow Y > 3/5 X + 1$
 $(0) > 3/5(0) + 1 \quad (2) > 3/5(0) + 1$
 $0 > 1 \quad 2 > 1$
 $\text{no} \quad \text{yes}$

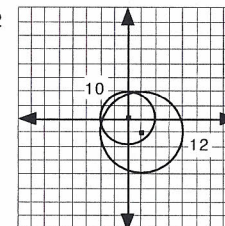
#2 & 4



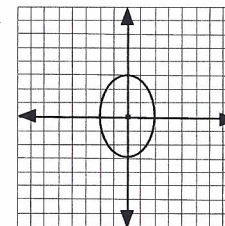
#5-8



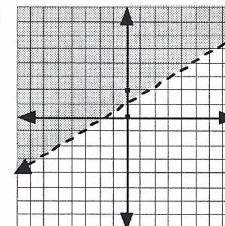
#10&12



#14



#20



24D

1-2) $Y = 1/2 X^2 + 2$

X	Y
0	2
1	2 1/2
-1	2 1/2
2	4
-2	4

see graph

3-4)

X	Y
0	-1
1	-1 1/2
-1	-1 1/2
2	-3
-2	-3

see graph

5) -2

6) 3

7) 3

8) 0

9) $X^2 - 4X + 4 + Y^2 - 2Y + 1 = 4 + 5$

$(X - 2)^2 + (Y - 1)^2 = 3^2$

$C = (2, 1) \quad R = 3$

10) on the graph

11) $(X + 2)^2 + (Y + 1)^2 = 5^2$

$(X + 2)^2 + (Y + 1)^2 = 25$

12) on the graph

13) $(-2, 1)$

14) $X \text{ term} = 0 \Rightarrow Y = 3, -1$

$Y \text{ term} = 0 \Rightarrow X = 2, -6$

15) $AB^2 = (6 - 0)^2 + (3 - 0)^2 = 45$

$AB = \sqrt{45} = 3\sqrt{5}$

16) $AC^2 = (-1 - 0)^2 + (-3 - 0)^2 = 10$

$AC = \sqrt{10}$

17) $\left(\frac{6-1}{2}\right), \left(\frac{3-3}{2}\right) = \left(2\frac{1}{2}, 0\right)$

18) $\left(\frac{6+0}{2}\right), \left(\frac{3+0}{2}\right) = \left(3, 1\frac{1}{2}\right)$

19) $5Y = X + 10 \Rightarrow Y = 1/5 X + 2$

$m = 1/5$ so perpendicular is -5

$Y = -5X + b \Rightarrow (-2) = -5(1) + b$

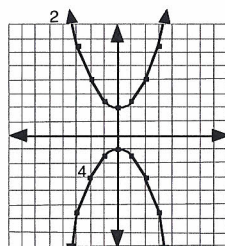
$3 = b \quad Y = -5X + 3$

20) $-Y > -X + 1/2 \Rightarrow Y < X - 1/2$

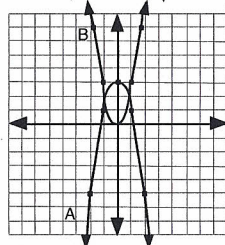
$(0) < (0) - 1/2 \quad (0) < (3) - 1/2$

$0 < -1/2 \text{ no} \quad 0 < 2 1/2 \text{ yes}$

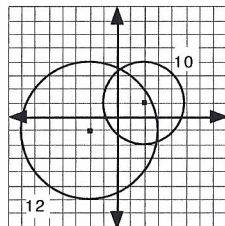
#2 & 4



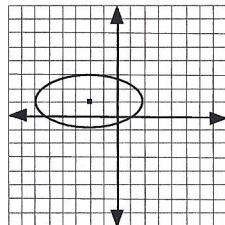
#5-8



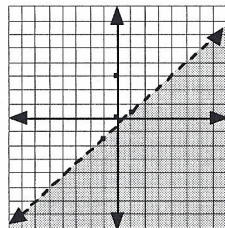
#10&12



#14



#20



24E

1-2) $Y = -2X^2$

X	Y
0	0
1	-2
-1	-2
2	-8
-2	-8

see graph

3-4) $Y = 2X^2 - 1$

X	Y
0	-1
1	1
-1	1
2	7
-2	7

see graph

5) -2

6) 1

7) -1/2

8) 2

9) $X^2 + Y^2 = 16$

$(X - 0)^2 + (Y - 0)^2 = 4^2$

$C = (0, 0) \quad R = 4$

10) on the graph

11) $(X - 0)^2 + (Y - 2)^2 = 3^2$

$X^2 + (Y - 2)^2 = 9$

12) on the graph

13) $(1, -1)$

14) $X \text{ term} = 0 \Rightarrow Y = 1, -3$

$Y \text{ term} = 0 \Rightarrow X = 5, -3$

15) $AB^2 = [0 - (-5)]^2 + [4 - 5]^2 = 25 + 1 = 26$

$AB = \sqrt{26}$

16) $AC^2 = [4 - (-5)]^2 + [-3 - 5]^2 = 81 + 64 = 145$

$AC = \sqrt{145}$

17) $\left(\frac{4+0}{2}\right), \left(\frac{-3+4}{2}\right) = \left(2, \frac{1}{2}\right)$

18) $\left(\frac{-5+0}{2}\right), \left(\frac{5+4}{2}\right) = \left(-2\frac{1}{2}, 4\frac{1}{2}\right)$

19) $4Y = X + 6 \Rightarrow Y = 1/4 X + 1\frac{1}{2}$

$m = 1/4$ so perpendicular is -4

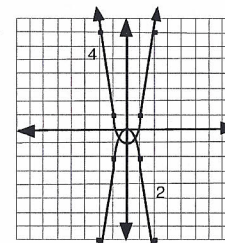
$Y = -4X + b \Rightarrow (3) = -4(0) + b$

$3 = b \quad Y = -4X + 3$

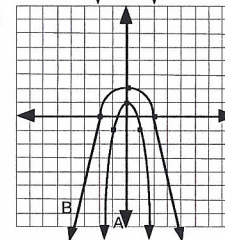
20) $(0) > 4(0) - 3/2 \quad (0) > 4(2) - 3/2$

$0 > -3/2 \text{ yes} \quad 0 > 6 1/2 \text{ no}$

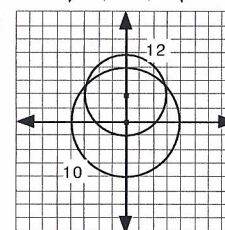
#2 & 4



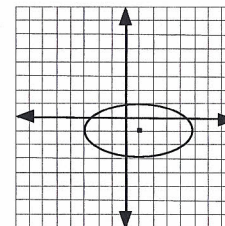
#5-8



#10&12



#14



#20

