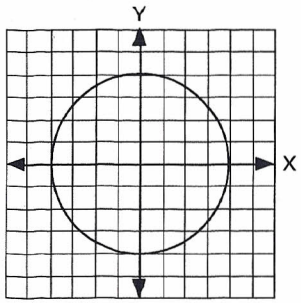
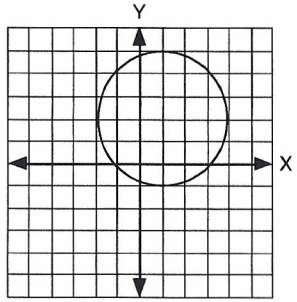
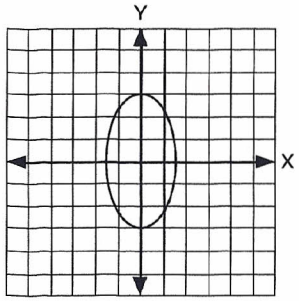
34A



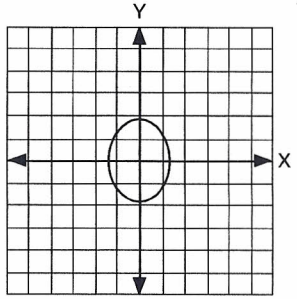
1) 4, -4
2) 4, -4
3) (0, 0)
4) 4



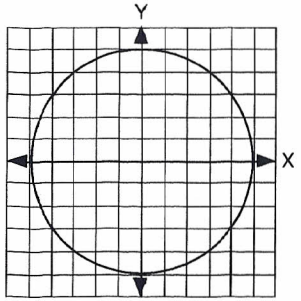
5) 5, -1
6) -2, 4
7) (1, 2)
8) 3



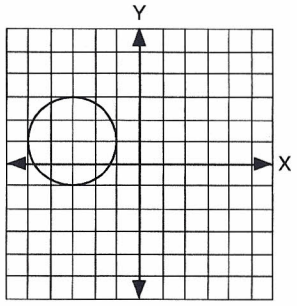
9) 3, -3
10) 3/2, -3/2
11) ellipse



12) $\sqrt{3}$, $-\sqrt{3}$
13) $\sqrt{2}$, $-\sqrt{2}$
14) ellipse

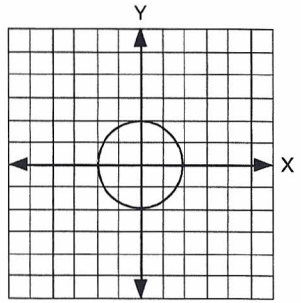


15) on the graph

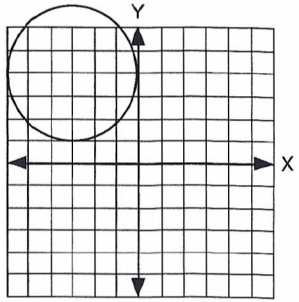


16) on the graph

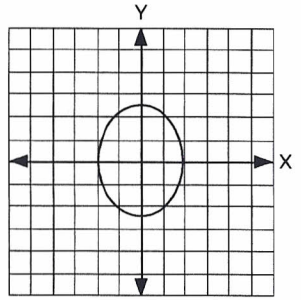
34B



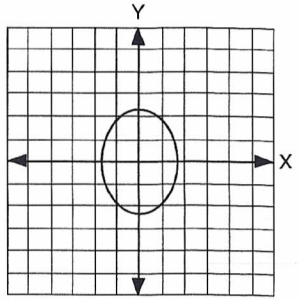
1) 2, -2
2) 2, -2
3) (0, 0)
4) 2



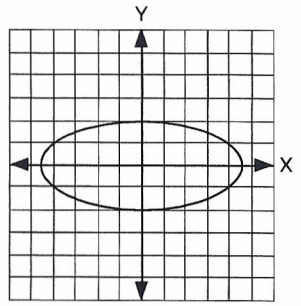
5) 1, 7
6) 0, -6
7) (-3, 4)
8) 3



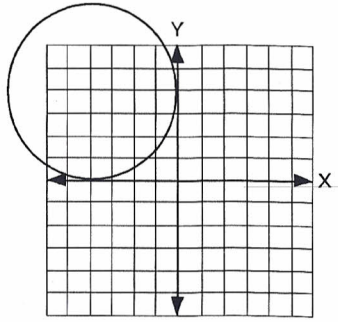
9) $\sqrt{6}$, $-\sqrt{6}$
10) 2, -2
11) ellipse



12) $\sqrt{5}$, $-\sqrt{5}$
13) $\sqrt{3}$, $-\sqrt{3}$
14) ellipse

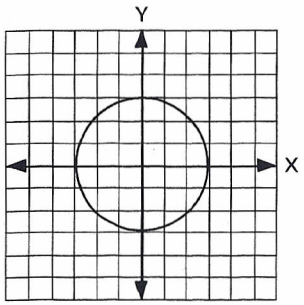


15) on the graph



16) on the graph

34C

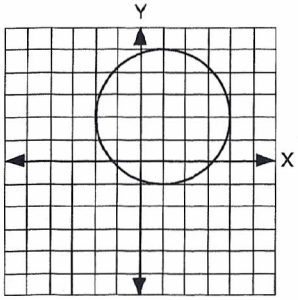


1) 3, -3

2) 3, -3

3) (0, 0)

4) 3

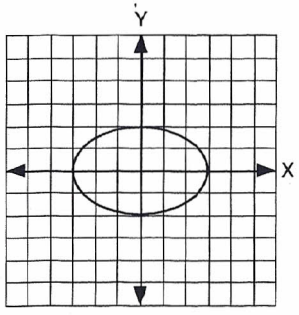


5) -1, 5

6) -2, 4

7) (1, 2)

8) 3



9) 2, -2

10) 3, -3

11) $8^3 = 512$

$512\overline{)1721}\ 3$, 1536, 185 ; $64\overline{)185}\ 2$, 128, 57 ; $8\overline{)57}\ 7$, 56, 1 ; $1\overline{)1}\ 1$, 1, 0

3271_8

12) $5^5 = 3125$

$3125\overline{)4090}\ 1$, 3125, 965 ; $625\overline{)965}\ 1$, 625, 340 ; $125\overline{)340}\ 2$, 250, 90 ; $25\overline{)90}\ 3$, 75, 15

$5\overline{)15}\ 3$, 15, 0 ; $1\overline{)0}\ 0$, 0, 0

112330_5

13) $6 \times 7^2 + 5 \times 7^1 + 4 \times 7^0$

$6(49) + 5(7) + 4(1) =$

$294 + 35 + 4 = 333$

14) $8 \times 12^2 + 11 \times 12^1 + 0 \times 12^0$

$8(144) + 11(12) + 0(1) =$

$1152 + 132 + 0 = 1284$

15) $(1 \times 10^3)(5 \times 10^2)(7 \times 10^4) =$

$(1 \times 5 \times 7)(10^3 \times 10^2 \times 10^4) = 35 \times 10^9 =$

3.5×10^{10}

4×10^{10} (with significant digits)

16) $(5.8 \times 10^{-5})(2.3 \times 10^{-3}) =$

$(5.8 \times 2.3)(10^{-5} \times 10^{-3}) = 13.34 \times 10^{-8} =$

1.3×10^{-7} (with significant digits)

17) $(2X + 2) + 4X = -4$

$6X = -6$ $\qquad$ $Y = 2(-1) + 2$

$X = -1$ $\qquad$ $Y = 0$

18) $3Y - 2X = -1 \Rightarrow Y = 2/3\ X - 1/3$

These lines are parallel, so there is no solution!

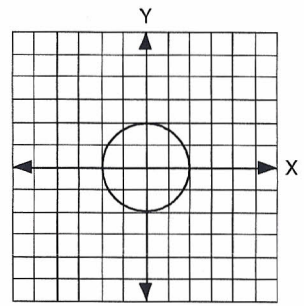
19) $2Y(Y^4 - 81) = 2Y(Y^2 + 9)(Y^2 - 9) =$

$2Y(Y^2 + 9)(Y + 3)(Y - 3)$

20) $(Y^4 + 1)(Y^4 - 1) = (Y^4 + 1)(Y^2 + 1)(Y^2 - 1) =$

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

34D

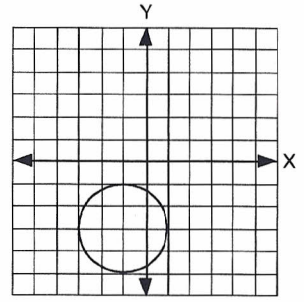


1) 2, -2

2) 2, -2

3) (0, 0)

4) 2

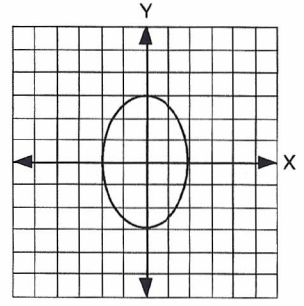


5) -1, -5

6) 1, -3

7) (-1, -3)

8) 2



9) 3, -3

10) 2, -2

11) $X - 1\overline{)X^3 - 3X^2 + 3X - 1}\ X^2 - 2X + 1$

$-(X^3 - X^2)$

$-2X^2 + 3X$

$-(-2X^2 + 2X)$

$X - 1$

$-(X - 1)$

12) $X - 2\overline{)8X^3 - 4X^2 + 5X + 1}\ 8X^2 + 12X + 29$ R 59

$-(8X^3 - 16X^2)$

$12X^2 + 5X$

$-(12X^2 - 24X)$

$29X + 1$

$-(29X - 58)$

59

13) $4^4 = 256$

$256\overline{)371}\ 1$, 256, 115 ; $64\overline{)115}\ 1$, 64, 51 ; $16\overline{)51}\ 3$, 48, 3 ; $4\overline{)3}\ 0$, 0, 3 ; $1\overline{)3}\ 3$, 3, 0

11303_4

14) $8^2 = 64$

$64\overline{)215}\ 3$, 192, 23 ; $8\overline{)23}\ 2$, 16, 7 ; $1\overline{)7}\ 7$, 7, 0

327_8

15) $4 \times 7^2 + 0 \times 7^1 + 6 \times 7^0$

$4(49) + 0(7) + 6(1) =$

$196 + 0 + 6 = 202$

16) $1 \times 4^2 + 0 \times 4^1 + 0 \times 4^0$

$1(16) + 0(4) + 0(1) =$

$16 + 0 + 0 = 16$

17) $(3 \times 2)(10^{-5} \times 10^{-2}) = 6 \times 10^{-7}$

18) $(4 \times 5 \div 2)(10^{-5} \times 10^2 \div 10^3) = 10 \times 10^{-6} =$

1×10^{-5}

19) $4(3X - 1) = -3X - 19$ $\qquad$ $Y = 3(-1) - 1$

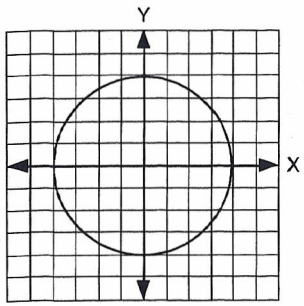
$12X - 4 = -3X - 19$ $\qquad$ $Y = -4$

$15X = -15,\ X = -1$

20) $21 + 9 = 15M - 9M$

$30 = 6M,\ M = 5$

34E

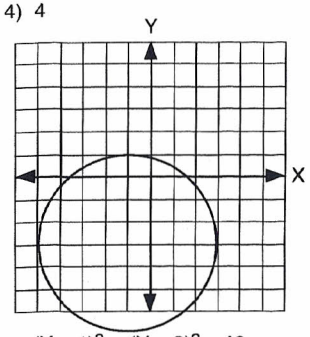


1) 4, -4

2) 4, -4

3) (0, 0)

4) 4



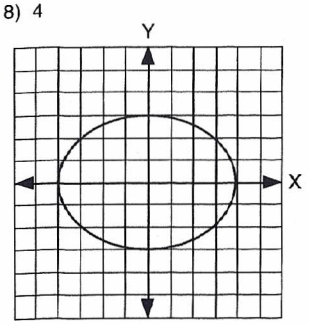
$(X + 1)^2 + (Y + 3)^2 = 16$

5) 1, -7

6) 3, -5

7) (-1, -3)

8) 4



9) 3, -3

10) 4, -4

11)
$$X + 1 \overline{)\, X^3 + 3X^2 + 3X + 1}$$
$$X^2 + 2X + 1$$
$$-(X^3 + X^2)$$
$$2X^2 + 3X$$
$$-(2X^2 + 2X)$$
$$X + 1$$
$$-(X + 1)$$

12)
$$X + 2 \overline{)\, X^3 + 4X^2 + 7X + 6}$$
$$X^2 + 2X + 3$$
$$-(X^3 + 2X^2)$$
$$2X^2 + 7X$$
$$-(2X^2 + 4X)$$
$$3X + 6$$
$$-(3X + 6)$$

13) $6^3 = 216$ (This problem was misprinted in some student books.)

216	36	6	1
4	5	1	4
1054	190	10	4
864	180	6	4
190	10	4	0

4514_6

14) $1 \times 2^5 + 0 \times 2^4 + 1 \times 2^3 + 1 \times 2^2 + 1 \times 2^1 + 1 \times 2^0$
$1(32) + 0(16) + 1(8) + 1(4) + 1(2) + 1(1) =$
$32 + 0 + 8 + 4 + 2 + 1 = 47$

15) $3000 < 3025$

16) $174{,}240 \text{ ft.}^2 < 200{,}000 \text{ ft.}^2$

17) $(4.2 \div 6)(10^4 \div 10^{-3}) = .7 \times 10^7 = 7 \times 10^6$

18) $(7 \times 8 \div 4 \times 1.4)(10^8 \times 10^0 \div 10^3 \times 10^5) =$
$10 \times 10^0 = 1 \times 10^1$

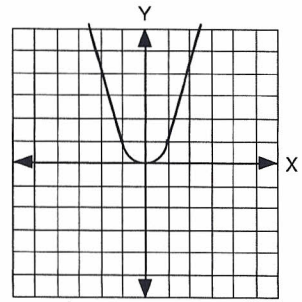
19) $(X^2 - 4)(X^2 + 4) =$
$(X - 2)(X + 2)(X^2 + 4)$

20) $125 + 80A - 100 = 30$
$80A = 5$
$A = 5/80 = 1/16$

35A

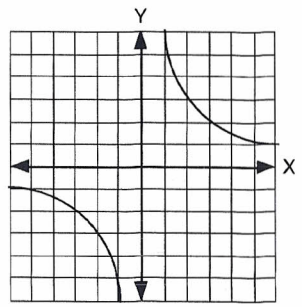
1)

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



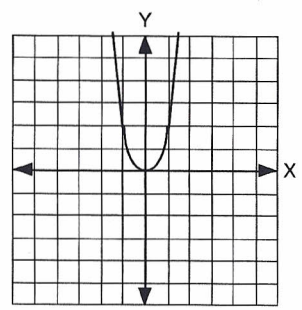
2)

X	Y
2	3
-2	-3
3	2
-3	-2
1	6
-1	-6
6	1
-6	-1



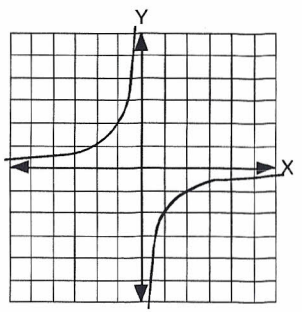
3)

X	Y
0	0
1	2
2	8
3	18
-1	2
-2	8



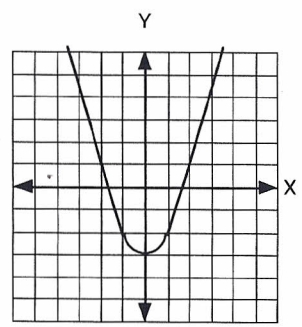
4)

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



5)

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



6)

X	Y
2	4
-2	-4
4	2
-4	-2
1 1/3	6
-1 1/3	-6
6	4/3
-6	-4/3