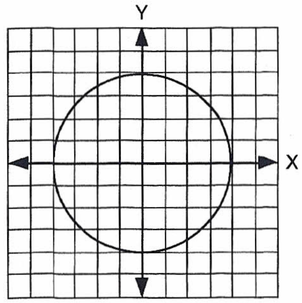
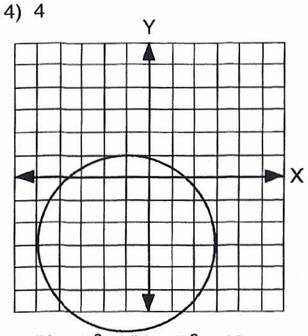


1) 4, -4

2) 4, -4

3) (0, 0)

4) 4



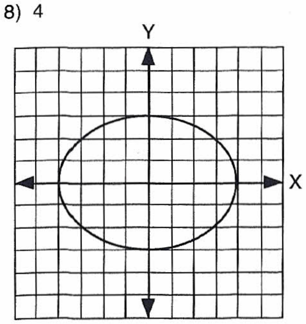
$(X + 1)^2 + (Y + 3)^2 = 16$

5) 1, -7

6) 3, -5

7) (-1, -3)

8) 4



9) 3, -3

10) 4, -4

11)
$$\begin{array}{r} X^2 + 2X + 1 \\ X + 1 \overline{\big)\, X^3 + 3X^2 + 3X + 1} \\ \underline{-(X^3 + X^2)} \\ 2X^2 + 3X \\ \underline{-(2X^2 + 2X)} \\ X + 1 \\ \underline{-(X + 1)} \end{array}$$

12)
$$\begin{array}{r} X^2 + 2X + 3 \\ X + 2 \overline{\big)\, X^3 + 4X^2 + 7X + 6} \\ \underline{-(X^3 + 2X^2)} \\ 2X^2 + 7X \\ \underline{-(2X^2 + 4X)} \\ 3X + 6 \\ \underline{-(3X + 6)} \end{array}$$

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

$$216\overline{\big)1054}\ \to 4,\ \frac{-864}{190} \qquad 36\overline{\big)190}\ \to 5,\ \frac{-180}{10} \qquad 6\overline{\big)10}\ \to 1,\ \frac{-6}{4} \qquad 1\overline{\big)4}\ \to 4,\ \frac{-4}{0}$$

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

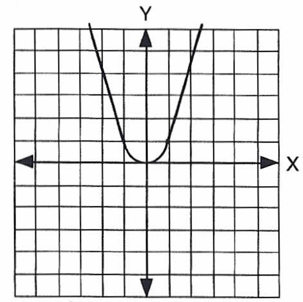
18) $(7 \times 8 \div 4 \times 1.4)(10^8 \times 10^0 \div 10^3 \times 10^5) =$
$10 \times 10^0 = 1 \times 10^1$

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

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

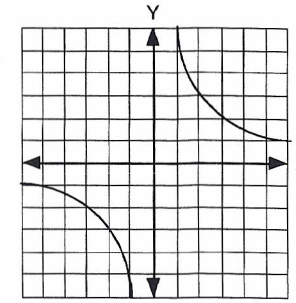
1)

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



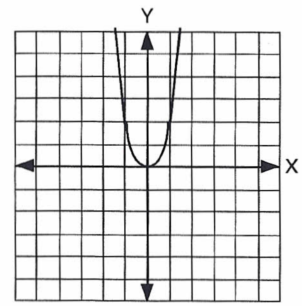
2)

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



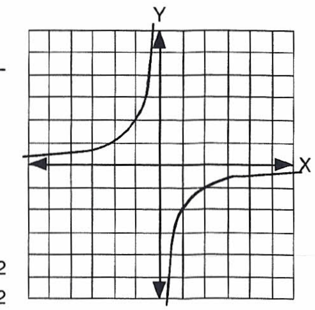
3)

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



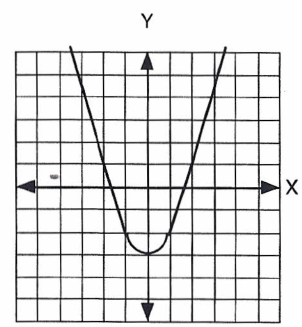
4)

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



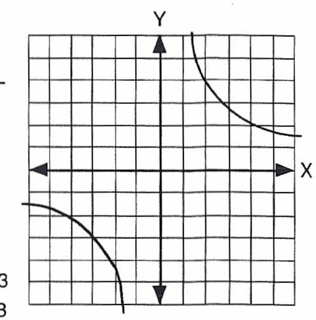
5)

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



6)

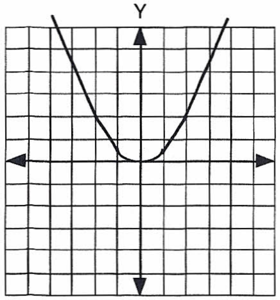
X	Y
2	4
-2	-4
4	2
-4	-2
1 1/3	6
-1 1/3	-6
6	4/3
-6	-4/3



35B

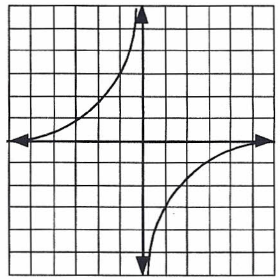
1)

X	Y
0	0
1	1/2
2	2
3	9/2
-1	1/2
-2	2



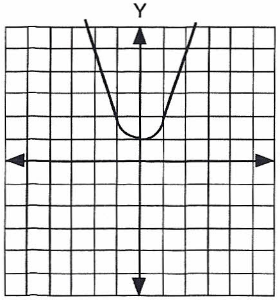
2)

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



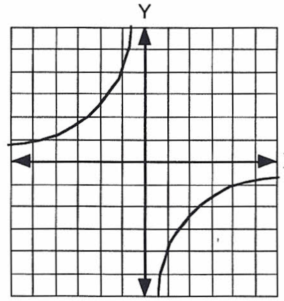
3)

X	Y
0	1
1	2
2	5
-1	2
-2	5



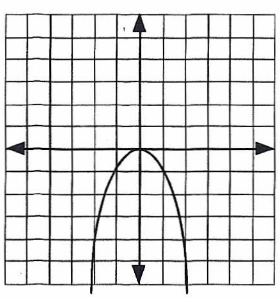
4)

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



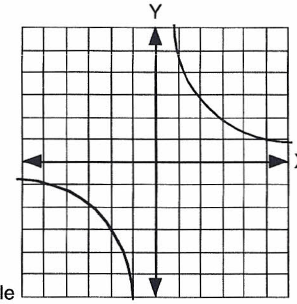
5)

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



6)

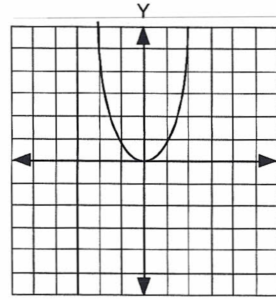
X	Y
1	5
-1	-5
5	1
-5	-1
1 1/4	4
-1 1/4	-4
0	no possible value



35C

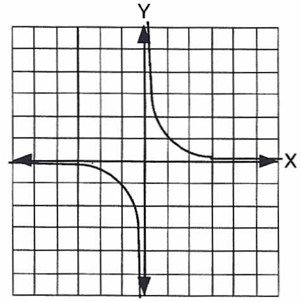
1)

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



2)

X	Y
1	1
-1	-1
3	1/3
-3	-1/3
5	1/5
-5	-1/5



3) line

4) circle

5) ellipse

6) line

7) hyperbola

8) parabola

9) $1 \times 12^3 + 7 \times 12^2 + 9 \times 12^1 + 3 \times 12^0$
$1(1728) + 7(144) + 9(12) + 3(1) =$
$1728 + 1008 + 108 + 3 = 2847$

10) $5^3 = 125$

$125 \overline{)131}$ → 1, -125, remainder 6; $25 \overline{)6}$ → 0, -0, remainder 6; $5 \overline{)6}$ → 1, -5, remainder 1; $1 \overline{)1}$ → 1, -1, remainder 0

1011_5

11) $1 \times 2^3 + 1 \times 2^2 + 1 \times 2^1 + 1 \times 2^0$
$1(8) + 1(4) + 1(2) + 1(1) =$
$8 + 4 + 2 + 1 = 15$

$2 \times 3^2 + 0 \times 3^1 + 2 \times 3^0$
$2(9) + 0(3) + 2(1) =$
$18 + 0 + 2 = 20$

$15 < 20$

12) $2 \times 144 < 289$
$288 < 289$

13) $(7 \div 1.4)(10^{-8} \div 10^6) = 5 \times 10^{-14}$

14) $(2.4 \times 2.6 \div 6 \times 5.2)(10^{-4} \times 10^5 \div 10^{-5} \times 10^{-7})$
$(6.24 \div 31.2)(10^1 \div 10^{-12})$
$.2 \times 10^{13} = 2 \times 10^{12}$

15) $\frac{2}{3}X + \frac{4}{5} = -\frac{17}{30}$ (multiply each term by 30)

$20X + 24 = -17$

$20X = -41$

$X = -41/20$ or $-2\ 1/20$

16) $\frac{5}{6} - \frac{1}{3}X + \frac{4}{7} = 0$ (multiply each term by 42)

$35 - 14X + 24 = 0$

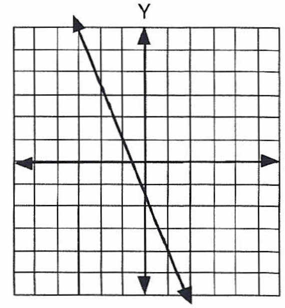
$14X = 59$

$X = 4\ 3/14$

17) 5616

18) $Y(Y^2 - 1) = Y(Y + 1)(Y - 1)$

19) on the graph



20) $m = \frac{-4 - 1}{1 - (-1)} = \frac{-5}{2}$

$Y = -5/2\ X + b$

$(1) = -5/2\ (-1) + b$

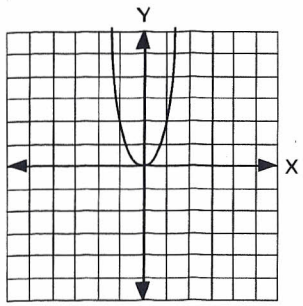
$b = -3/2$

$Y = -5/2\ X - 3/2$ or $2Y + 5X = -3$

35D

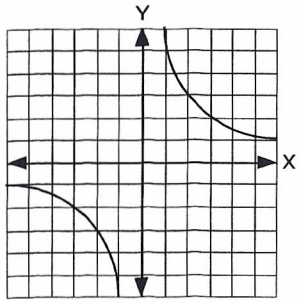
1)

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



2)

X	Y
.5	12
-.5	-12
1	6
-1	-6
2	3
-2	-3
3	2
-3	-2



3) parabola

4) circle

5) hyperbola

6) parabola

7) ellipse

8) line

9) $1 \times 4^2 + 3 \times 4^1 + 2 \times 4^0$
$1(16) + 3(4) + 2(1) =$
$16 + 12 + 2 = 30$

10) $8^3 = 512$

$512 \overline{)2348}$ 4, 2048, 300

$64 \overline{)300}$ 4, 256, 44

$8 \overline{)44}$ 5, 40, 4

$1 \overline{)4}$ 4, 4, 0

4454_8

11) $(14)(-2) > -25 - 4$
$-28 > -29$

12) $2021 < 2025$

13) $(6 \times 2.5)(10^7 \times 10^{-9}) = 15 \times 10^{-2} =$
1.5×10^{-1}
(2×10^{-1} if the student took significant digits into account. Either answer is acceptable.)

14) $(1.1 \times 1.5) \div (5 \times 3)(10^{-9} \times 10^8) \div (10^1 \times 10^{-6})$
$(1.65 \div 15)(10^{-1} \div 10^{-5})$
$.11 \times 10^4 = 1.1 \times 10^3$
(1×10^3 if the student took significant digits into account. Either answer is acceptable.)

15) $Y^{(-2)-(-6)} = Y^4$

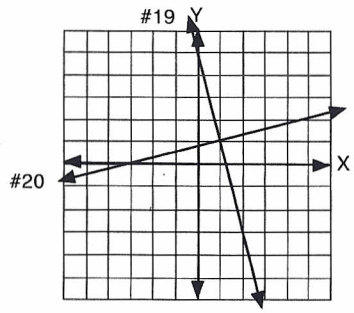
16) $.25 \cancel{\text{mi.}} \times \frac{5280 \text{ ft.}}{1 \cancel{\text{mi.}}} = 1{,}320 \text{ ft.}$

17) $C^6D^3C^2D^9D^2C^{-8} = D^{14}$

18) $3X^{-2}Y^2 + 4Y^4Y^0Y^{-2}X^1 =$
$3X^{-2}Y^2 + 4XY^2$

19) on the graph

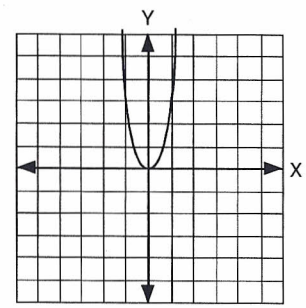
20) on the graph (m = 1/4)



35E

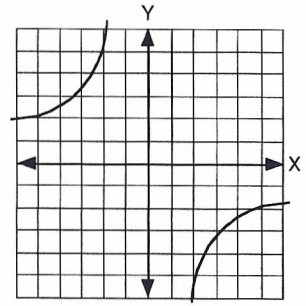
1)

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



2)

X	Y
1	-10
-1	10
2	-5
-2	5
5	-2
-5	2



3) ellipse

4) hyperbola

5) line

6) circle

7) line

8) circle

9) $1 \times 7^2 + 5 \times 7^1 + 1 \times 7^0$
$1(49) + 5(7) + 1(1) =$
$49 + 35 + 1 = 85$

10) $4^4 = 256$

$256 \overline{)291}$ 1, 256, 35

$64 \overline{)35}$ 0, 0, 35

$16 \overline{)35}$ 2, 32, 3

$4 \overline{)3}$ 0, 0, 3

$1 \overline{)3}$ 3, 3, 0

10203_4

11) $12 > -8$

12) $9^{1/3} < (287)^2$
$\sqrt[3]{9} < (287)^2$

13) 9.3×10^7

14) 3.8×10^{-2}

15) $900 \cancel{\text{g}} \times \frac{.035 \text{ oz.}}{1 \cancel{\text{g}}} = 31.5 \text{ oz.}$

16) $1 \cancel{\text{yd.}^2} \times \frac{36 \text{ in.}}{1 \cancel{\text{yd.}}} \times \frac{36 \text{ in.}}{1 \cancel{\text{yd.}}} = 1{,}296 \text{ in.}^2$

17) $A(A^2 - 25) =$
$A(A + 5)(A - 5)$

18) $3(81 - X^4) = 3(9 + X^2)(9 - X^2) =$
$3(9 + X^2)(3 + X)(3 - X)$

19) $X + (X + 4) + 5 - 1 - 2X = 2X$
$8 = 2X$
$4 = X$
Debbie had 4 flowers to start with.

20) $5D + (5)(4) = 45$
$5D + 20 = 45$
$5D = 25$
$D = 5$
Roger did 5 problems correctly.