1

① Find mean

$$\frac{1450 + 4460 + 6940 + 7240 + 1880 + 6250}{6} =$$

$$\frac{28220}{6} =$$

$$4703.33333 =$$

4703 = round

TSIGI

OS1815

√√√

② $-7x - 7 = 1 + 9x$

$-7x - 7 + 7 = 1 + 9x + 7$

$-7x = 9x + 8$

$-7x - 9x = 9x + 8 - 9x$

$-16x = 8$

$\frac{-16x}{-16} = \frac{8}{-16}$

$x = -\frac{8}{16}$

$x = -\frac{8(1)}{8(2)}$

$x = -\frac{1}{2}$

3. $3x - 8 = 4(x+1)$

$3x - 8 = 4x + 4$

$3x - 8 + 8 = 4x + 4 + 8$

$3x = 4x + 12$

$3x - 4x = 4x + 12 - 4x$

$-1x = 12$

$\frac{-1x}{-1} = \frac{12}{-1}$

$x = -12$

4. $\frac{5x}{2} + 3 = \frac{1}{7}$ LCD = 14

$\frac{5x}{2} + \frac{3}{1} = \frac{1}{7}$

$\frac{5x}{2}(14) + \frac{3}{1}(14) = \frac{1}{7}(14)$

$5x(7) + 3(14) = 1(2)$

$35x + 42 = 2$

$35x + 42 - 42 = 2 - 42$

$35x = -40$

$\frac{35x}{35} = -\frac{40}{35}$

$x = -\frac{5(8)}{5(7)}$

$x = -\frac{8}{7}$

3.

(5) $\frac{13}{10}x + \frac{6}{5} = \frac{6}{5}x$ LCD = 10

$\frac{13}{10}x(10) + \frac{6}{5}(10) = \frac{6}{5}x(10)$

$13x(1) + 6(2) = 6x(2)$

$13x + 12 = 12x$

$13x + 12 - 12 = 12x - 12$

$13x = 12x - 12$

$13x - 12x = 12x - 12 - 12x$

$1x = -12$

$x = -12$

(6) $\frac{r+6}{5} = \frac{r+8}{7}$ cross multiply

$7(r+6) = 5(r+8)$

$7r + 42 = 5r + 40$

$7r + 42 - 42 = 5r + 40 - 42$

$7r = 5r - 2$

$7r - 5r = 5r - 2 - 5r$

$2r = -2$

$\frac{2r}{2} = \frac{-2}{2}$

$r = -1$

(7) $P = 2L + 2W$, $P = 28$, $W = 9$

(4.)

$28 = 2L + 2(9)$

$28 = 2L + 18$

$28 - 18 = 2L + 18 - 18$

$10 = 2L$

$\frac{10}{2} = \frac{2L}{2}$

$5 = L$

(8.) $C = \frac{5}{9}(F - 32)$, $F = 167$

$C = \frac{5}{9}(167 - 32)$

$C = \frac{5}{9}(135)$

$C = 5(15)$

$C = 75$

$167 - 32 = 135$

$9\overline{)135}$ $= 15$

$-(9)$

45

$-(45)$

0 rem

(9.) $A = \pi r^2$, $\pi = 3.14$, $r = 7$

$A = 3.14(7)^2$

$A = 3.14(7)(7)$

$A = 3.14(49)$

$A = 153.86$

(10) $14x + 9y = 10$ Solve for y

(5)

$14x + 9y - 14x = 10 - 14x$

$9y = 10 - 14x$

$\frac{9y}{9} = \frac{10-14x}{9}$

$y = \frac{10-14x}{9}$

(11) The sum of a number and three is negative eleven. Find the number.

$x + 3 = -11$

$x + 3 - 3 = -11 - 3$

$x = -14$

(12) A rectangular carpet has a perimeter of 198 inches. The length of the carpet is 61 inches more than the width. What are the dimensions of the carpet?

$P = 2L + 2W$

$198 = 2(x+61) + 2(x)$

$198 = 2x + 122 + 2x$

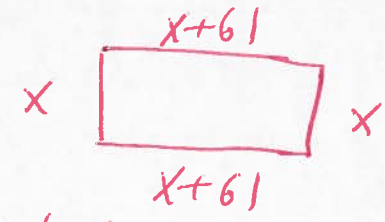
$198 = 4x + 122$

$198 - 122 = 4x + 122 - 122$

$76 = 4x$

$\frac{76}{4} = \frac{4x}{4}$

$19 = x$ width



Subst

$x + 61 =$

$19 + 61 =$

80 length

(13) $6x-2<7(x-3)$

$6x-2<7x-21$

$6x-2+2<7x-21+2$

$6x<7x-19$

$6x-7x<7x-19-7x$

$-1x<-19$

$\frac{-1x}{-1} > \frac{-19}{-1}$

$x>19$

(6.)

$(19, \infty)$

(14) Find an ordered pair that satisfies the equation $4x+y=-34$ by letting $x=-9$.

$4(-9)+y=-34$

$-36+y=-34$

$-36+y+36=-34+36$

$y=2$

$(x, y)=(-9, 2)$

(15) Graph

$y = \frac{1}{2}x + 5$

$y = \frac{1}{2}(0) + 5$

$y = 0 + 5$

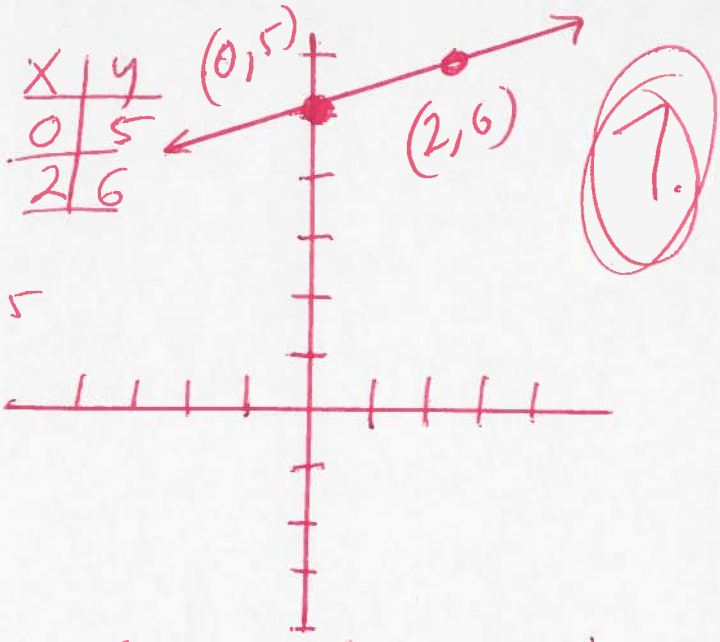
$y = 5$

$y = \frac{1}{2}(2) + 5$

$y = 1 + 5$

$y = 6$

x	y
0	5
2	6



1.

(16) Solve the system of equations using substitution.

$x + y = -6$

$y = 2x$

$x + (2x) = -6$

$x + 2x = -6$

$1x + 2x = -6$

$3x = -6$

$\frac{3x}{3} = \frac{-6}{3}$

$x = -2$

$x + y = -6$

$-2 + y = -6$

$-x + y + x = -6 + 2$

$y = -4$

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

(17) Solve the system of equations using elimination.

(8)

$3x+y=-30$

$5x-y=6$

$8x+0=-24$

$8x=-24$

$\frac{8x}{8}=\frac{-24}{8}$

$x=-3$

$3x+y=-30$

$3(-3)+y=-30$

$-9+y=-30$

$-9+y+9=-30+9$

$y=-21$

$(x, y)=(-3,-21)$

(18) $(7x^2+20x+5)-(5x^2-4x-12)=$

$7x^2+20x+5-5x^2+4x+12=$

$2x^2+24x+17=$

(19) Evaluate

$-2x^2+8x-3=$, $x=-3$

$-2(-3)^2+8(-3)-3=$

$-2(-3)(-3)+8(-3)-3=$

$-2(9)+8(-3)-3=$

$-18-24-3=$

$-42-3=$

$-45=$

(20) $(-8x^9y^8z)^2 =$

$((-8)^1x^9y^8z^1)^2 =$

$(-8)^{1(2)}x^{9(2)}y^{8(2)}z^{1(2)} =$

$(-8)^2x^{18}y^{16}z^2 =$

$(-8)(-8)x^{18}y^{16}z^2 =$

$64x^{18}y^{16}z^2 =$

(21.) $(7x^6y)(8x^2y^4) =$

$(7x^6y^1)(8x^2y^4) =$

$56x^{6+2}y^{1+4} =$

$56x^8y^5 =$

(22) $2y^2(3y^2+3y-7) =$

$6y^4+6y^3-14y^2 =$

(23.) $(2x+5y)(2x-5y) =$

$4x^2-10xy+10xy-25y^2 =$

$4x^2-25y^2 =$

10.

(24) $(6x-11y)^2 =$

$(6x-11y)(6x-11y) =$

$36x^2 - 66xy - 66xy + 121y^2 =$

$36x^2 - 132xy + 121y^2 =$

(25) $\frac{56m^{20}n^{14}}{7m^{19}n^{10}} =$

$\frac{7(8)m^{20-19}n^{14-10}}{7} =$

$8m^1n^4 =$

(26) $\left(\frac{5}{6}\right)^3 =$

$\left(\frac{5}{6}\right)\left(\frac{5}{6}\right)\left(\frac{5}{6}\right) =$

$\frac{125}{216} =$

(27) $3^{-4} =$

$\frac{1}{3^4} =$

$\frac{1}{(3)(3)(3)(3)} =$

$\frac{1}{81} =$

(28) $\frac{21r^7 - 35r^4}{7r} =$

$\frac{21r^7}{7r^1} - \frac{35r^4}{7r^1} =$

$\frac{7(3)r^7}{7r^1} - \frac{7(5)r^4}{7r^1} =$

$3r^{7-1} - 5r^{4-1} =$

$3r^6 - 5r^3 =$

(29) $20x^5y + 36xy^6 =$ Factor GCF

$20x^5y^1 + 36x^1y^6 =$

$4x^1y^1(5x^4 + 9y^5) =$

(30) $x^2 + x - 20 =$ factor

20·1
10·2
4·5

$(x - 4)(x + 5) =$

(31) $x^2 - x - 12 =$ factor

12·1
6·2
3·4

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

(32) $x^2 - 6x + 8 =$ factor

8·1
2·4

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

(33) $4x^2+12x-40=$ Factor

$4(x^2+3x-10)=$

$4(x-2)(x+5)=$

10.1
2.5

12

(34) $6x^2-x-7=$ Factor

$(6x-7)(x+1)=$

6.1
2.3

1.7

(35) $4x^2-\frac{4}{9}=$ Factor $a^2-b^2=(a+b)(a-b)$

$(2x)^2-(\frac{2}{3})^2=$

$(2x+\frac{2}{3})(2x-\frac{2}{3})=$

(36) $81x^2-16y^2=$ Factor $a^2-b^2=(a+b)(a-b)$

$(9x)^2-(4y)^2=$

$(9x+4y)(9x-4y)=$

(37) $x^3-5x^2-6x=$ Factor

$x(x^2-5x-6)=$

$x(x+1)(x-6)=$

6.1
2.3

(38) $5y^3-5y^2-100y=$ Factor

$5y(y^2-y-20)=$

$5y(y+4)(y-5)=$

(39) Solve

$X(4X+12)=0$

Set $X=0$ OR $4X+12=0$

$4X+12-12=0-12$

$4X=-12$

$\frac{4X}{4}=\frac{-12}{4}$

$X=-3$

$\{0,-3\}$

3.

(40) Solve

$5X(6X+30)=0$

Set $5X=0$ OR $6X+30=0$

$\frac{5X}{5}=\frac{0}{5}$ OR $6X+30-30=0-30$

$X=0$ OR $6X=-30$

$\frac{6X}{6}=\frac{-30}{6}$

$X=-5$

$\{0,-5\}$

(41) Solve

$X^2+2X-48=0$

$(X-6)(X+8)=0$

48 · 1
24 · 2
12 · 4
6 · 8

Set $X-6=0$ OR $X+8=0$

$X-6+6=0+6$ OR $X+8-8=0-8$

$X=6$ OR $X=-8$

$\{6,-8\}$

(42) Solve

$x^2 - 17x + 72 = 0$

$(x-8)(x-9) = 0$

72.1
36.2
18.4
9.8

14.

Set $x-8=0$ OR $x-9=0$

$x-8+8=0+8$ OR $x-9+9=0+9$

$x=8$ OR $x=9$

$\{8, 9\}$

(43) Solve

$2x^2 - 3x - 5 = 0$

2.1 1.5

$(2x-5)(x+1) = 0$

Set $2x-5=0$ OR $x+1=0$

$2x-5+5=0+5$ OR $x+1-1=0-1$

$2x = 5$

$\frac{2x}{2} = \frac{5}{2}$

OR $x=-1$

$x = \frac{5}{2}$

$\{\frac{5}{2}, -1\}$

(44) Solve

$x^2 - x = 42$

42.1
21.2
14.3
6.7

$x^2 - x - 42 = 42 - 42$

$x^2 - x - 42 = 0$

$(x+6)(x-7) = 0$

Set $x+6=0$ OR $x-7=0$

$x+6-6=0-6$ OR $x-7+7=0+7$

$x=-6$ OR $x=7$

$\{-6, 7\}$

(45) Solve

$x^2 = 2x$

$x^2 - 2x = 2x - 2x$

$x^2 - 2x = 0$

$x(x-2) = 0$

Set $x = 0$ OR $x - 2 = 0$

OR $x - 2 + 2 = 0 + 2$

OR $x = 2$

15.

$\{0, 2\}$

(46) $\frac{8m^2p}{33p^4} \cdot \frac{11m^1p^3}{24m^7} =$ Simplify

$\frac{(8)(11)\ m^3\ p^4}{(33)(24)\ p^4\ m^7} =$

$\frac{(8)(11)}{(3)(11)(3)(8)\ m^{7-3}} =$

$\frac{1}{9m^4} =$

(47) Solve

$\frac{3}{x} - \frac{1}{4} = \frac{5}{x}$ Mult by LCD = 4x (16.)

$\frac{3}{x}(4x) - \frac{1}{4}(4x) = \frac{5}{x}(4x)$

$3(4) - 1(x) = 5(4)$

$12 - 1x = 20$

$12 - 1x - 12 = 20 - 12$

$-1x = 8$

$\frac{-1x}{-1} = \frac{8}{-1}$

$x = -8$

(48) $f(x) = x^2 + 3x - 4$ find $f(3)$

$f(3) = (3)^2 + 3(3) - 4$

$f(3) = (3)(3) + 3(3) - 4$

$f(3) = 9 + 9 - 4$

$f(3) = 18 - 4$

$f(3) = 14$

(49) $f(x) = |x| - 6$ find $f(-9)$

$f(-9) = |-9| - 6$

$f(-9) = 9 - 6$

$f(-9) = 3$

(50) $f(x) = \frac{x+5}{14x-10}$ find $f(-10)$

$f(-10) = \frac{(-10)+5}{14(-10)-10}$

$f(-10) = \frac{-10+5}{-140-10}$

$f(-10) = \frac{-5}{-150}$

$f(-10) = \frac{5}{150}$

$f(-10) = \frac{\cancel{5}(1)}{\cancel{5}(30)}$

$f(-10) = \frac{1}{30}$

(51.) Graph

$h(x) = x^2 - 1$

x	h(x)
-1	0
0	-1
1	0

$h(-1) = (-1)^2 - 1$

$h(-1) = (-1)(-1) - 1$

$h(-1) = 1 - 1$

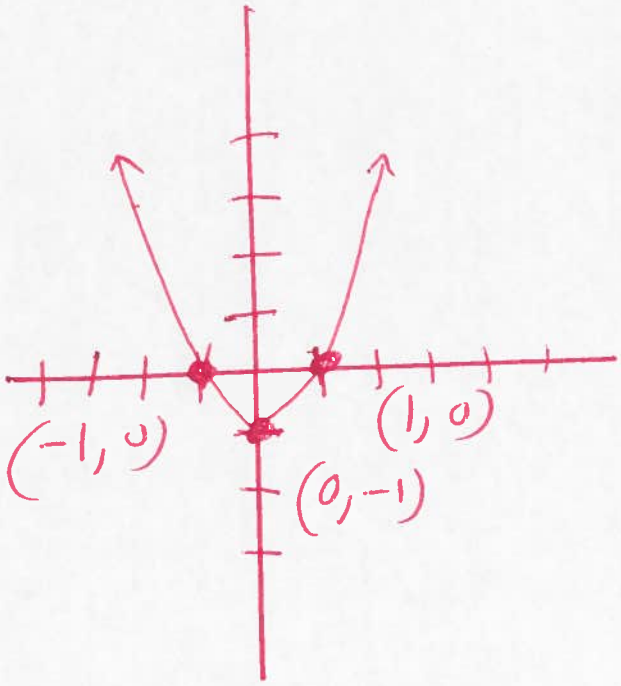
$h(-1) = 0$

$h(0) = (0)^2 - 1$

$h(0) = (0)(0) - 1$

$h(0) = 0 - 1$

$h(0) = -1$



$h(1) = (1)^2 - 1$

$h(1) = (1)(1) - 1$

$h(1) = 1 - 1$

$h(1) = 0$

(52.) $f(x) = \sqrt{2x - 1}$ find $f(13)$

$f(13) = \sqrt{2(13) - 1}$

$f(13) = \sqrt{26 - 1}$

$f(13) = \sqrt{25}$

$f(13) = 5$

53. Solve

$\sqrt{2x} = 6$

$(\sqrt{2x})^2 = (6)^2$

$2x = 36$

$\frac{2x}{2} = \frac{36}{2}$

$x = 18$

{18}

54. Solve

$\sqrt{x+5} = 6$

$(\sqrt{x+5})^2 = (6)^2$

$x + 5 = 36$

$x + 5 - 5 = 36 - 5$

$x = 31$

{31}

55. Solve

$x^2 = 196$

$\sqrt{x^2} = \pm\sqrt{196}$

$x = \pm 14$

$x = -14$ OR $x = 14$

{-14, 14}

29.

56) $(x-7)^2 = 4$ Solve

$\sqrt{(x-7)^2} = \pm\sqrt{4}$

$x-7 = \pm 2$

$x-7 = -2$ or $x-7 = 2$

$x-7+7 = -2+7$ OR $x-7+7 = 2+7$

$x = 5$ OR $x = 9$

$\{5, 9\}$

57) $1x^2+6x-7=0$ Solve by Quadratic formula

$a=1, b=6, c=-7$

$$x = \frac{-b \pm \sqrt{b^2-4ac}}{2a}$$

$$x = \frac{-(6) \pm \sqrt{(6)^2-4(1)(-7)}}{2(1)}$$

$$x = \frac{-6 \pm \sqrt{36+28}}{2}$$

$$x = \frac{-6 \pm \sqrt{64}}{2}$$

$$x = \frac{-6 \pm 8}{2}$$

$x = -3 \pm 4$

$x = -3-4$ or $x = -3+4$

$x = -7$ OR $x = 1$

$\{-7, 1\}$

(58) $1x^2+12x+14=0$ Solve by using Quadratic formula

21

$a=1,\ b=12,\ c=14$

$$x=\frac{-b\pm\sqrt{b^2-4ac}}{2a}$$

$$x=\frac{-(12)\pm\sqrt{(12)^2-4(1)(14)}}{2(1)}$$

$$x=\frac{-12\pm\sqrt{144-56}}{2}$$

$$x=\frac{-12\pm\sqrt{88}}{2}$$

$$x=\frac{-12\pm\sqrt{4*22}}{2}$$

$$x=\frac{-12\pm\sqrt{4}\sqrt{22}}{2}$$

$$x=\frac{-12\pm2\sqrt{22}}{2}$$

$$x=-6\pm1\sqrt{22}$$

$$x=-6\pm\sqrt{22}$$

$\{-6-\sqrt{22},\ -6+\sqrt{22}\}$

$x=-6-\sqrt{22}$ OR $x=-6+\sqrt{22}$

(59) Graph $f(x) = x^2 + 3$

x	f(x)
-1	4
0	3
1	4

22.

$f(-1) = (-1)^2 + 3$

$f(-1) = (-1)(-1) + 3$

$f(-1) = 1 + 3$

$f(-1) = 4$

$f(0) = (0)^2 + 3$

$f(0) = (0)(0) + 3$

$f(0) = 0 + 3$

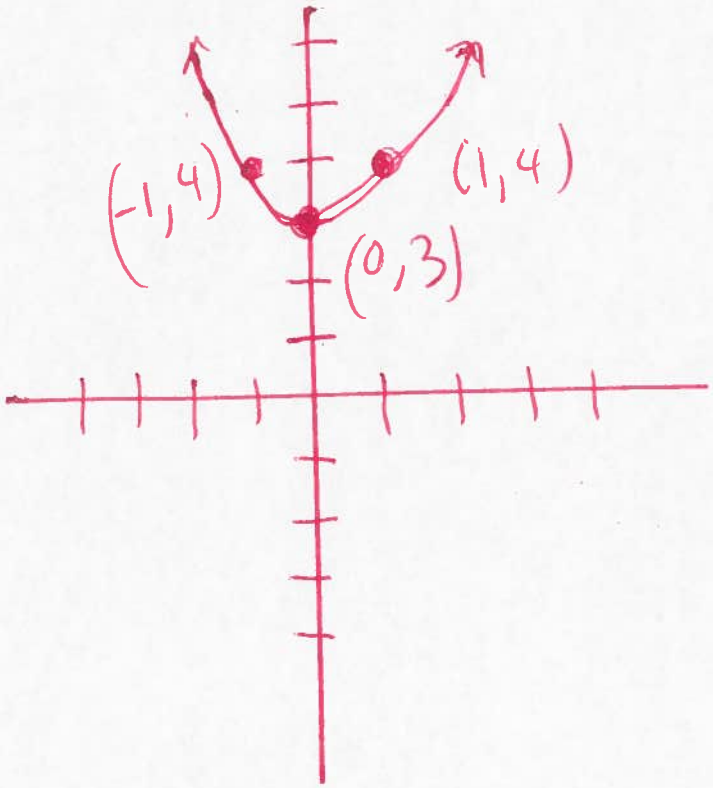
$f(0) = 3$

$f(1) = (1)^2 + 3$

$f(1) = (1)(1) + 3$

$f(1) = 1 + 3$

$f(1) = 4$



(60) graph

$f(x) = (x+2)^2 - 4$

x	f(x)
-3	-3
-2	-4
-1	-3

$f(-3) = (-3+2)^2 - 4$

$f(-3) = (-1)^2 - 4$

$f(-3) = (-1)(-1) - 4$

$f(-3) = 1 - 4$

$f(-3) = -3$

$f(-2) = (-2+2)^2 - 4$

$f(-2) = (0)^2 - 4$

$f(-2) = (0)(0) - 4$

$f(-2) = 0 - 4$

$f(-2) = -4$

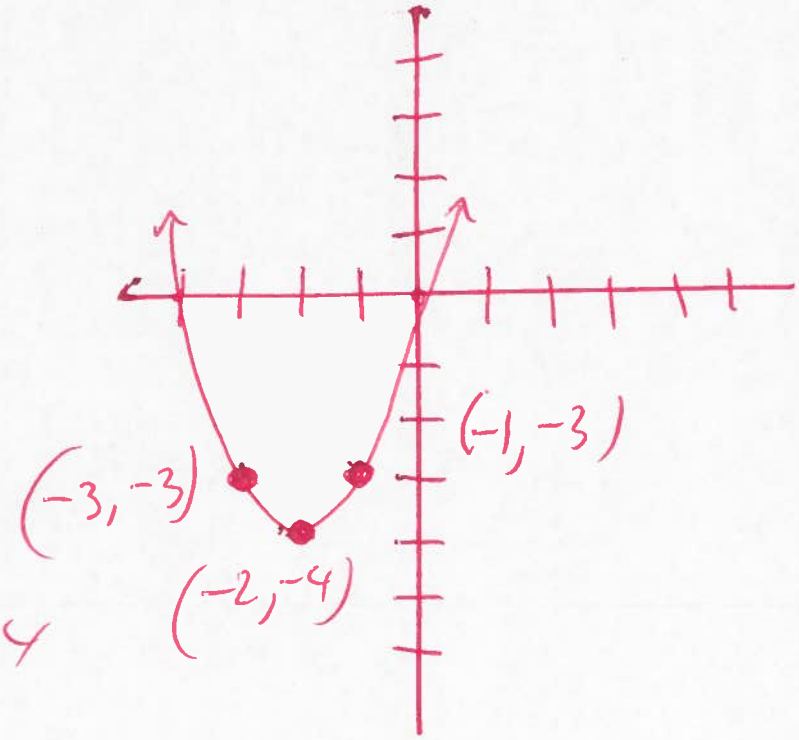
$f(-1) = (-1+2)^2 - 4$

$f(-1) = (1)^2 - 4$

$f(-1) = (1)(1) - 4$

$f(-1) = 1 - 4$

$f(-1) = -3$



61. Graph $f(x) = -x^2 + 4x - 3$

x	f(x)
1	0
2	1
3	0

24

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

$f(1) = -(1)(1) + 4(1) - 3$

$f(1) = -1 + 4 - 3$

$f(1) = 3 - 3$

$f(1) = 0$

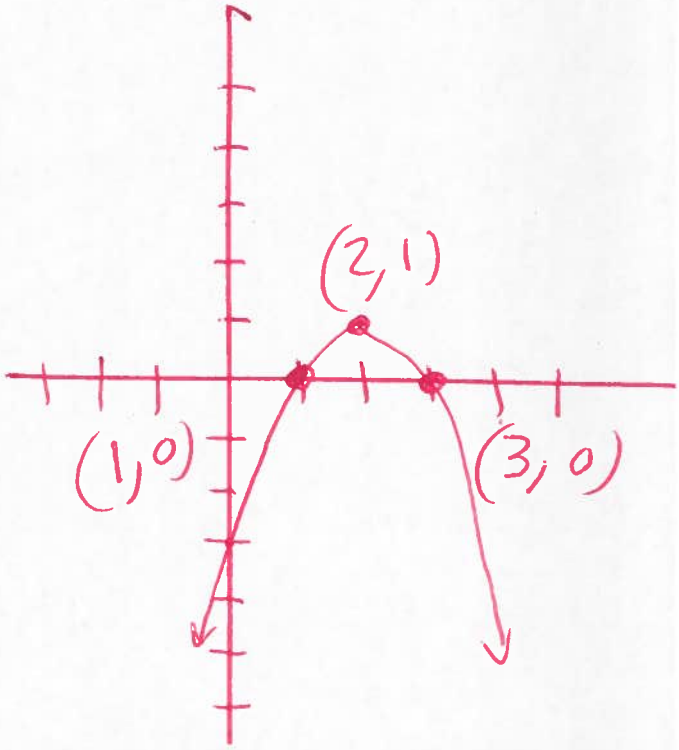
$f(2) = -(2)^2 + 4(2) - 3$

$f(2) = -(2)(2) + 4(2) - 3$

$f(2) = -4 + 8 - 3$

$f(2) = 4 - 3$

$f(2) = 1$



$f(3) = -(3)^2 + 4(3) - 3$

$f(3) = -(3)(3) + 4(3) - 3$

$f(3) = -9 + 12 - 3$

$f(3) = 3 - 3$

$f(3) = 0$