

$$\textcircled{1} \quad 7y + 2 = 15 + 3y$$

$$7y + \cancel{2} - 2 = 15 + 3y - 2$$

$$7y = 3y + 13$$

$$7y - 3y = 3y + 13 - 3y$$

$$4y = 13$$

$$\frac{\cancel{4}y}{\cancel{4}} = \frac{13}{4}$$

$$y = \frac{13}{4}$$

②

$$\frac{x}{8} = \frac{x+1}{9}$$

$$9(x) = 8(x+1) \quad \text{cross multiply}$$

$$9x = 8x + 8$$

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

$$x = 8$$

③

$$14 = 8 + \frac{m}{2}$$

$$14 - 8 = 8 + \frac{m}{2} - 8$$

$$6 = \frac{m}{2}$$

$$\frac{6}{1} = \frac{m}{2}$$

$$2(6) = 1(m) \quad \text{cross multiply}$$

$$12 = m$$

④

$$4x + 1 = 8$$

$$4x + \cancel{1} - 1 = 8 - 1$$

$$4x = 7$$

$$\frac{\cancel{4}x}{\cancel{4}} = \frac{7}{4}$$

$$x = \frac{7}{4}$$

1.

TS ONE step

(step by step)

11-20-19
200 Questions

✓✓✓✓

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$$5. \quad 1 + \frac{6}{x} = -11$$

$$1 + \frac{6}{x} - 1 = -11 - 1$$

$$\frac{6}{x} = -12$$

$$\frac{6}{x} = \frac{-12}{1}$$

$$1(6) = -12(x) \quad \text{cross multiply}$$

$$6 = -12x$$

$$\frac{6}{-12} = \frac{-12x}{-12}$$

$$-\frac{6}{12} = x$$

$$-\frac{6(1)}{6(2)} = x$$

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

$$6. \quad 11x - 3 = 7$$

$$11x - 3 + 3 = 7 + 3$$

$$11x = 10$$

$$\frac{11x}{11} = \frac{10}{11}$$

$$\boxed{x = \frac{10}{11}}$$

$$7. \quad 4 - x = 2(x - 4)$$

$$4 - x = 2x - 8$$

$$4 - x - 4 = 2x - 8 - 4$$

$$-x = 2x - 12$$

$$-1x - 2x = 2x - 12 - 2x$$

$$-3x = -12$$

$$\frac{-3x}{-3} = \frac{-12}{-3}$$

$$\boxed{x = 4}$$



$$\textcircled{8} \quad \frac{7+x}{x} = 22$$

$$\frac{7+x}{x} = \frac{22}{1}$$

$$1(7+x) = 22(x) \quad \text{cross multiply}$$

$$7+1x = 22x$$

$$7+\cancel{1x}-\cancel{1x} = 22x-1x$$

$$7 = 21x$$

$$\frac{7}{21} = \frac{\cancel{21}x}{\cancel{21}}$$

$$\frac{7}{21} = x$$

$$\frac{\cancel{7}(1)}{\cancel{7}(3)} = x$$

$$\frac{1}{3} = x$$

$$\textcircled{9} \quad \text{Find } a \text{ if } ax-40=x+2 \text{ and } x=2$$

$$ax-40=x+2$$

$$a(2)-40=(2)+2$$

$$2a-40=2+2$$

$$2a-40=4$$

$$2a-\cancel{40}+\cancel{40}=4+40$$

$$2a=44$$

$$\frac{2a}{2} = \frac{44}{2}$$

$$a=22$$



$$\textcircled{10} \quad \frac{6x}{2} = 18$$

$$3x = 18$$

$$\frac{3x}{3} = \frac{18}{3}$$

$$\textcircled{x = 6}$$

$$\textcircled{11} \quad 6x + 20 = 2x$$

$$6x + \cancel{20} - \cancel{20} = 2x - 20$$

$$6x = 2x - 20$$

$$6x - 2x = \cancel{2x} - 20 - \cancel{2x}$$

$$4x = -20$$

$$\frac{4x}{4} = \frac{-20}{4}$$

$$\textcircled{x = -5}$$

$$\textcircled{12} \quad \text{Find } c \text{ if } k = c + 293 \text{ and } k = 20$$

$$k = c + 293$$

$$20 = c + 293$$

$$20 - 293 = c + \cancel{293} - \cancel{293}$$

$$\textcircled{-273 = c}$$

$$\textcircled{13} \quad 6(x - 2) - 12 = 2x$$

$$6x - 12 - 12 = 2x$$

$$6x - 24 = 2x$$

$$6x - \cancel{24} + \cancel{24} = 2x + 24$$

$$6x = 2x + 24$$

$$6x - 2x = \cancel{2x} + 24 - \cancel{2x}$$

$$4x = 24$$

$$\frac{4x}{4} = \frac{24}{4}$$

$$\textcircled{x = 6}$$



14) Find y if $3x+5y=29$ and $x=3$

$$3x+5y=29$$

$$3(3)+5y=29$$

$$9+5y=29$$

$$9+5y-9=29-9$$

$$5y=20$$

$$\frac{5y}{5} = \frac{20}{5}$$

$$y=4$$



15.

$$3 = \frac{12-x}{x}$$

$$\frac{3}{1} = \frac{12-x}{x}$$

$$3(x) = 1(12-x) \quad \text{cross multiply}$$

$$3x = 12 - 1x$$

$$3x + 1x = 12 - 1x + 1x$$

$$4x = 12$$

$$\frac{4x}{4} = \frac{12}{4}$$

$$x=3$$

16

$$\frac{x}{6} = \frac{x+3}{7}$$

$$7(x) = 6(x+3) \quad \text{cross multiply}$$

$$7x = 6x + 18$$

$$7x - 6x = 6x + 18 - 6x$$

$$x=18$$

$$\begin{aligned}
 (17) \quad & X - 20 = 5X - 20 \\
 & X - \cancel{20} + 20 = 5X - \cancel{20} + 20 \\
 & X = 5X \\
 & X - 5X = 5X - 5X \\
 & 1X - 5X = 0 \\
 & -4X = 0 \\
 & \frac{-4X}{-4} = \frac{0}{-4}
 \end{aligned}$$

$$X = 0$$

$$\begin{aligned}
 (18) \quad & 5X = 12 + 2X \\
 & 5X - 2X = 12 + 2X - 2X \\
 & 3X = 12 \\
 & \frac{3X}{3} = \frac{12}{3}
 \end{aligned}$$

$$X = 4$$

$$\begin{aligned}
 (19) \quad & 10 - X = X - 10 \\
 & \cancel{10} - X - \cancel{10} = X - 10 - 10 \\
 & -X = X - 20 \\
 & -X - X = X - 20 - X \\
 & -1X - 1X = -20 \\
 & -2X = -20 \\
 & \frac{-2X}{-2} = \frac{-20}{-2}
 \end{aligned}$$

$$X = 10$$



$$\textcircled{20} \quad 6x + 16 = 2x$$

$$6x + \cancel{16} - \cancel{16} = 2x - 16$$

$$6x = 2x - 16$$

$$6x - 2x = 2x - 16 - 2x$$

$$4x = -16$$

$$\frac{4x}{4} = \frac{-16}{4}$$

$$\boxed{x = -4}$$

$$\textcircled{21} \quad \frac{2}{5x} + \frac{1}{x} = 21 \quad \text{LCD} = 5x$$

$$\frac{2}{5x}(5x) + \frac{1}{x}(5x) = 21(5x)$$

$$2(1) + 1(5) = 105x$$

$$2 + 5 = 105x$$

$$7 = 105x$$

$$\frac{7}{105} = \frac{105x}{105}$$

$$\frac{7}{105} = x$$

$$\frac{7(1)}{7(15)} = x$$

$$\boxed{\frac{1}{15} = x}$$



$$\begin{array}{r} 21 \\ \times 5 \\ \hline 105 \end{array}$$

$$\begin{array}{r} 35 \\ 3 \overline{)105} \\ \underline{9} \\ 15 \end{array}$$

$$\begin{array}{r} 3 \overline{)105} \\ \underline{9} \\ 15 \end{array}$$

$$(22) -6x > -24$$

$$\frac{-6x}{-6} < \frac{-24}{-6}$$

$$x < 4$$

$$(23) 2x < -10$$

$$\frac{2x}{2} < \frac{-10}{2}$$

$$x < -5$$

$$(24) 2x + 1 < 41$$

$$2x + 1 - 1 < 41 - 1$$

$$2x < 40$$

$$\frac{2x}{2} < \frac{40}{2}$$

$$x < 20$$

$$(25) -2x + 1 < -9$$

$$-2x + 1 - 1 < -9 - 1$$

$$-2x < -10$$

$$\frac{-2x}{-2} > \frac{-10}{-2}$$

$$x > 5$$

$$(26) x - 2 < -2$$

$$x - 2 + 2 < -2 + 2$$

$$x < 0$$

$$(27) x + 2 < -2$$

$$x + 2 - 2 < -2 - 2$$

$$x < -4$$



28

$$2x+1 < 4x+21$$

$$2x+\cancel{x}-1 < 4x+21-1$$

$$2x < 4x+20$$

$$2x - 4x < 4x+20 - 4x$$

$$-2x < 20$$

$$\frac{-\cancel{2}x}{-2} > \frac{20}{-2}$$

$$x > -10$$

29

$$4x+2 < 2x-8$$

$$4x+\cancel{2}-\cancel{2} < 2x-8-2$$

$$4x < 2x-10$$

$$4x - 2x < 2x-10 - 2x$$

$$2x < -10$$

$$\frac{\cancel{2}x}{2} < \frac{-10}{2}$$

$$x < -5$$

30

$$\frac{x}{4} + \frac{3x}{8} > 10$$

$$LCD = 8$$

$$\frac{x}{4}(8) + \frac{3x}{8}(8) > 10(8)$$

$$x(2) + 3x(1) > 80$$

$$2x + 3x > 80$$

$$5x > 80$$

$$\frac{5x}{5} > \frac{80}{5}$$

$$x > 16$$

$$\begin{array}{r} 16 \\ 5 \overline{) 80} \\ \underline{50} \\ 30 \end{array}$$

31) Find P if $P = 2(L + w)$, $L = 10$, $w = 6$

$$P = 2(L + w)$$

$$P = 2(10 + 6)$$

$$P = 2(16)$$

$$P = 32$$

32) Find $f(4)$ if $f(x) = \frac{x+10}{x-5}$

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

$$f(4) = \frac{(4)+10}{(4)-5}$$

$$f(4) = \frac{4+10}{4-5}$$

$$f(4) = \frac{14}{-1}$$

$$f(4) = -14$$

33) Find A if $A = \pi r^2$, $\pi = 3.14$, $r = 6$

$$A = \pi r^2$$

$$A = 3.14 (6)^2$$

$$A = 3.14 (6)(6)$$

$$A = 3.14 (36)$$

$$A = 113.04$$

$$\begin{array}{r} 3.14 \\ \times 36 \\ \hline 1884 \\ 942 \\ \hline 113.04 \end{array}$$

34) Find C if $C = \frac{5}{9}(F - 32)$ and $F = 50$

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

$$C = \frac{5}{9}(50 - 32)$$

$$C = \frac{5}{9}(18)$$

$$C = 5(2)$$

$$C = 10$$

10.

35. Find $f(-3)$ if $f(x) = 2x^2 - 4x - 10$

$$f(x) = 2x^2 - 4x - 10$$

$$f(-3) = 2(-3)^2 - 4(-3) - 10$$

$$f(-3) = 2(-3)(-3) - 4(-3) - 10$$

$$f(-3) = 2(9) - 4(-3) - 10$$

$$f(-3) = 18 + 12 - 10$$

$$f(-3) = 30 - 10$$

$$f(-3) = 20$$

36. If $x = -5$ then evaluate $(x+9)(x+5)$

$$(x+9)(x+5) =$$

$$(-5+9)(-5+5) =$$

$$(4)(0) =$$

$$0 =$$

37. Find $f(-1)$ if $f(x) = x^4 - 12x^2 + 11$

$$f(x) = x^4 - 12x^2 + 11$$

$$f(-1) = (-1)^4 - 12(-1)^2 + 11$$

$$f(-1) = (-1)(-1)(-1)(-1) - 12(-1)(-1) + 11$$

$$f(-1) = (1) - 12(1) + 11$$

$$f(-1) = 1 - 12 + 11$$

$$f(-1) = -11 + 11$$

$$f(-1) = 0$$



38. Find $f(2)$ if $f(x) = x^2 + 3$

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

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

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

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

$$f(2) = 7$$

39. Find $f(-2)$ if $f(x) = 4x^2$

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

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

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

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

$$f(-2) = 16$$

40. Find $f(8)$ if $f(x) = x^{-2}$

$$f(x) = x^{-2}$$

$$f(8) = (8)^{-2}$$

$$f(8) = 8^{-2}$$

$$f(8) = \frac{1}{8^2}$$

$$f(8) = \frac{1}{(8)(8)}$$

$$f(8) = \frac{1}{64}$$

12.

(41) find $f(2)$ if $f(x) = \frac{4x}{1-x}$

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

$$f(2) = \frac{4(2)}{1-(2)}$$

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

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

$$f(2) = -8$$

(42) find $m(4)$ if $m(x) = x+8$

$$m(x) = x+8$$

$$m(4) = (4)+8$$

$$m(4) = 4+8$$

$$m(4) = 12$$

(43) find $f(-1)$ if $f(x) = (x+1)^2 + 2$

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

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

$$f(-1) = (0)^2 + 2$$

$$f(-1) = (0)(0) + 2$$

$$f(-1) = 0 + 2$$

$$f(-1) = 2$$

(44) find $f(1)$ if $f(x) = (x+1)^2 + 4$

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

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

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

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

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

$$f(1) = 8$$

13

(45) find $f(-2)$ if $f(x) = 4(x+1)^2 + 9$

$$f(x) = 4(x+1)^2 + 9$$

$$f(-2) = 4(-2+1)^2 + 9$$

$$f(-2) = 4(-1)^2 + 9$$

$$f(-2) = 4(-1)(-1) + 9$$

$$f(-2) = 4(1) + 9$$

$$f(-2) = 4 + 9$$

$$f(-2) = 13$$

14.

(46) find $f(0)$ if $f(x) = \frac{1}{2}x + 3$

$$f(x) = \frac{1}{2}x + 3$$

$$f(0) = \frac{1}{2}(0) + 3$$

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

$$f(0) = 3$$

(47) find $f(4)$ if $f(x) = \frac{1}{4}x - 2$

$$f(x) = \frac{1}{4}x - 2$$

$$f(4) = \frac{1}{4}(4) - 2$$

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

$$f(4) = -1$$

(48) find $f(-1)$ if $f(x) = \sqrt{x+1} + 2$

$$f(x) = \sqrt{x+1} + 2$$

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

$$f(-1) = \sqrt{0} + 2$$

$$f(-1) = 0 + 2$$

$$f(-1) = 2$$

(49) find $f(0)$ if $f(x) = \sqrt{x+1} + 8$

$$f(x) = \sqrt{x+1} + 8$$

$$f(0) = \sqrt{0+1} + 8$$

$$f(0) = \sqrt{1} + 8$$

$$f(0) = 1 + 8$$

$$f(0) = 9$$

(50) find $f(4)$ if $f(x) = |x-8|$

$$f(x) = |x-8|$$

$$f(4) = |4-8|$$

$$f(4) = |-4|$$

$$f(4) = 4$$

(51) find $f(-4)$ if $f(x) = |5x-2|$

$$f(x) = |5x-2|$$

$$f(-4) = |5(-4)-2|$$

$$f(-4) = |-20-2|$$

$$f(-4) = |-22|$$

$$f(-4) = 22$$

(52) find $Pr-r$ if $p=-11$ and $r=\frac{1}{2}$

$$Pr-r$$

$$(-11)\left(\frac{1}{2}\right) - \left(\frac{1}{2}\right) =$$

$$\left(\frac{-11}{1}\right)\left(\frac{1}{2}\right) - \left(\frac{1}{2}\right) =$$

$$\frac{-11}{2} - \frac{1}{2} =$$

$$\frac{-11-1}{2} =$$

$$\frac{-12}{2} =$$

$$-6$$

151

(53) find $f(\frac{1}{4})$ if $f(x) = \frac{1}{x} + \frac{3}{x}$

$$f(x) = \frac{1}{x} + \frac{3}{x}$$

$$f(\frac{1}{4}) = \frac{1}{\frac{1}{4}} + \frac{3}{\frac{1}{4}}$$

$$f(\frac{1}{4}) = \frac{1}{\frac{1}{4}} + \frac{3}{\frac{1}{4}}$$

$$f(\frac{1}{4}) = \frac{1 \cdot 4}{1} + \frac{3 \cdot 4}{1}$$

$$f(\frac{1}{4}) = \frac{4}{1} + \frac{12}{1}$$

$$f(\frac{1}{4}) = 4 + 12$$

$$f(\frac{1}{4}) = 16$$

16.

(54) Find the mean of 1000, 2000, 4000, 7000, 9000

$$\begin{array}{r} 1000 \\ 2000 \\ 4000 \\ 7000 \\ + 9000 \\ \hline 23000 \end{array}$$

$$\begin{array}{r} 4600 \\ 5 \overline{) 23000} \\ \underline{(20)} \\ 30 \\ \underline{-(30)} \\ 00 \\ \underline{00} \\ 0 \end{array}$$

(55) Find X if
 $b=8$



$$a^2 + b^2 = c^2$$

$$(6)^2 + (8)^2 = c^2$$

$$36 + 64 = c^2$$

$$100 = c^2$$

$$\sqrt{100} = \sqrt{c^2}$$

$$10 = c$$

(56) Evaluate $1000(1.05)^2$

$$\begin{aligned} 1000(1.05)^2 &= \\ 1000(1.05)(1.05) &= \\ 1000(1.1025) &= \end{aligned}$$

$$\begin{array}{r} 1.05 \\ \times 1.05 \\ \hline 525 \\ 1000 \\ \hline 1.1025 \end{array}$$



(57) $\frac{a^{10}}{a^3} = \text{Simplify}$

$$a^{10-3} =$$

$$a^7 =$$

(58) Simplify $(-4x^1y^3)(-20x^2y^4)$

$$(-4x^1y^3)(-20x^2y^4) =$$

$$80x^{1+2}y^{3+4} =$$

$$80x^3y^7 =$$

(59) Simplify $-8xy(4xy - 7x)$

$$-8x^1y^1(4x^1y^1 - 7x^1) =$$

$$-32x^{1+1}y^{1+1} + 56x^{1+1}y^1 =$$

$$-32x^2y^2 + 56x^2y =$$

(60) Simplify

$$-2a^3(ab^2 + b^2)$$

$$-2a^3(a^1b^2 + b^2) =$$

$$-2a^{3+1}b^2 - 2a^3b^2 =$$

$$-2a^4b^2 - 2a^3b^2 =$$

(61.) Simplify $\left(\frac{10}{x}\right)^2 =$

$$\left(\frac{10}{x}\right)\left(\frac{10}{x}\right) =$$

$$\frac{100}{x^2} =$$

(18.)

(62.) Simplify $\left(\frac{4}{x}\right)^3 =$

$$\left(\frac{4}{x}\right)\left(\frac{4}{x}\right)\left(\frac{4}{x}\right) =$$

$$\frac{64}{x^3} =$$

(63.) Simplify $\left(\frac{2x}{3y}\right)\left(\frac{27y}{8x^2}\right) =$

$$\left(\frac{2x}{3y}\right)\left(\frac{3 \cdot 3 \cdot 3 y}{2 \cdot 2 \cdot 2 x x}\right) =$$

$$\frac{9}{4x} =$$

(64.) Simplify $\frac{x + 4x^2}{x} =$

$$\frac{x}{x} + \frac{4x^2}{x} =$$

(65.) Simplify

$$\frac{2xy + y}{y} =$$

$$\frac{2xy}{y} + \frac{y}{y} =$$

$$2x + 1 =$$

(66) if $a^2 + N + 8b^2 = (a+b)(a+8b)$ then $N =$

$$\begin{aligned}
 &= a^2 + 8ab + ab + 8b^2 \\
 &= a^2 + 8ab + 1ab + 8b^2 \\
 &= a^2 + 9ab + 8b^2
 \end{aligned}$$

$N = 9ab$

(67) Find V if $V = \pi r^2 h$, $r = 6a$, $h = 2a + 5$

$$V = \pi r^2 h$$

$$V = \pi (6a)^2 (2a + 5)$$

$$V = \pi (6a)(6a)(2a + 5)$$

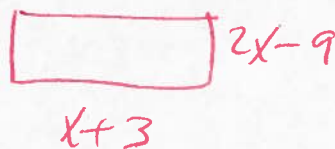
$$V = \pi (36a^2)(2a + 5)$$

$$V = \pi (72a^3 + 180a^2)$$

$$V = 72a^3\pi + 180a^2\pi$$

1	3
36	36
$\times 2$	$\times 5$
72	180

(68) Find area



$$A = LW$$

$$A = (x+3)(2x-9)$$

$$A = 2x^2 - 9x + 6x - 27$$

$$A = 2x^2 - 3x - 27$$

(69) Find the area of the square

$$A = LW$$

$$A = (4a-b)(4a-b)$$

$$A = 16a^2 - 4ab - 4ab + b^2$$

$$A = 16a^2 - 8ab + b^2$$



70. If $4x^2 - 16 = m$ then find $x^2 - 4 =$

$$4x^2 - 16 = m$$

$$\frac{4x^2}{4} - \frac{16}{4} = \frac{m}{4}$$

$$x^2 - 4 = \frac{m}{4}$$

20.

71.

simplify

$$(2xy^8)^4 =$$

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

$$2^4 x^4 y^{32} =$$

$$(2)(2)(2)(2) x^4 y^{32} =$$

$$16 x^4 y^{32} =$$

72.

simplify

$$\left(\frac{8k}{2}\right)^2 =$$

$$(4k)^2 =$$

$$(4k)(4k) =$$

$$16 k^2 =$$

73.

simplify

$$p - .15p =$$

$$1.00p - .15p =$$

$$.85p =$$

74.

simplify

$$m - .25m =$$

$$1.00m - .25m =$$

$$.75m =$$

75. Simplify $m - .75m =$
 $1.00m - .75m =$
 $.25m =$

21.

76. Find x if $\frac{ax-b}{4a-1} = b$ LCD = $4a-1$

$$\left(\frac{ax-b}{4a-1}\right)(4a-1) = b(4a-1)$$

$$ax - b = 4ab - b$$

$$ax - \cancel{b} + \cancel{b} = 4ab - \cancel{b} + \cancel{b}$$

$$ax = 4ab$$

$$\frac{ax}{a} = \frac{4ab}{a}$$

$$x = 4b$$

77. Simplify $\frac{-45x^8y^7z^{11}}{-30x^2y^5z^4} =$
 $\frac{-15(3)x^{8-2}y^{7-5}z^{11-4}}{-15(2)} =$
 $\frac{3x^6y^2z^7}{2} =$

78. Simplify $(3x+2y)(3x-2y) =$
 $9x^2 - 6xy + 6xy - 4y^2 =$
 $9x^2 - 4y^2 =$

79. Simplify $(3x-2y)(3x-2y) =$
 $9x^2 - 6xy - 6xy + 4y^2 =$
 $9x^2 - 12xy + 4y^2 =$

80. Simplify $(4x-3y)^2 =$

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

$$16x^2 - 12xy - 12xy + 9y^2 =$$

$$16x^2 - 24xy + 9y^2 =$$

81. Simplify $(x+2)(x-8) =$

$$x^2 - 8x + 2x - 16 =$$

$$x^2 - 6x - 16 =$$

82. Simplify $(x-2)(x+8) =$

$$x^2 + 8x - 2x - 16 =$$

$$x^2 + 6x - 16 =$$

83. Simplify $(x+1)(x-7) =$

$$x^2 - 7x + 1x - 7 =$$

$$x^2 - 6x - 7 =$$

84. Simplify $(x-1)(x+7) =$

$$x^2 + 7x - 1x - 7 =$$

$$x^2 + 6x - 7 =$$

85. Simplify $(x+3)(x-4) =$

$$x^2 - 4x + 3x - 12 =$$

$$x^2 - 1x - 12 =$$

$$x^2 - x - 12 =$$

22

86. Simplify $(x-3)(x+4) =$
 $x^2 + 4x - 3x - 12 =$
 $x^2 + 1x - 12 =$

23.

87. Simplify $(x+2)(x+4) =$
 $x^2 + 4x + 2x + 8 =$
 $x^2 + 6x + 8 =$

88. Simplify $(x-2)(x-4) =$
 $x^2 - 4x - 2x + 8 =$
 $x^2 - 6x + 8 =$

89. Simplify $(x+1)(x-2) =$
 $x^2 - 2x + 1x - 2 =$
 $x^2 - 1x - 2 =$
 $x^2 - x - 2 =$

90. Simplify $(x-1)(x+2) =$
 $x^2 + 2x - 1x - 2 =$
 $x^2 + 1x - 2 =$
 $x^2 + x - 2 =$

91. Simplify $(x-4)(x-6) =$
 $x^2 - 6x - 4x + 24 =$
 $x^2 - 10x + 24 =$

92. Simplify $(x-5)(x-5) =$
 $x^2 - 5x - 5x + 25 =$
 $x^2 - 10x + 25 =$

93. Simplify $(x+4)(x-4) =$
 $x^2 - 4x + 4x - 16 =$
 $x^2 - 16 =$

94. Simplify $(2x-1)(x+3) =$
 $2x^2 + 6x - 1x - 3 =$
 $2x^2 + 5x - 3 =$

95. Simplify $(2x+3)(2x-3) =$
 $4x^2 - 6x + 6x - 9 =$
 $4x^2 - 9 =$

96. Simplify $(2x+1)(x-3) =$
 $2x^2 - 6x + 1x - 3 =$
 $2x^2 - 5x - 3 =$

97. Simplify $(2x+1)(x+3) =$
 $2x^2 + 6x + 1x + 3 =$
 $2x^2 + 7x + 3 =$

98. Simplify $(2x-1)(x-3) =$
 $2x^2 - 6x - 1x + 3 =$
 $2x^2 - 7x + 3 =$

99. Simplify $(3x-2)(4x+3) =$
 $12x^2 + 9x - 8x - 6 =$
 $12x^2 + 1x - 6 =$

100. Simplify $(3x+2)(4x-3) =$
 $12x^2 - 9x + 8x - 6 =$
 $12x^2 - 1x - 6 =$
 $12x^2 - x - 6 =$

24

101. Simplify $(2x-3)(x+4) =$
 $2x^2 + 8x - 3x - 12 =$
 $2x^2 + 5x - 12 =$

25.

102. Simplify $(2x+3)(x-4) =$
 $2x^2 - 8x + 3x - 12 =$
 $2x^2 - 5x - 12 =$

103. Simplify $(x-5)(3x+2) =$
 $3x^2 + 2x - 15x - 10 =$
 $3x^2 - 13x - 10 =$

104. Simplify $(x+5)(3x-2) =$
 $3x^2 - 2x + 15x - 10 =$
 $3x^2 + 13x - 10 =$

105. Simplify $(8x+1)(x-1) =$
 $8x^2 - 8x + 1x - 1 =$
 $8x^2 - 7x - 1 =$

106. Simplify $(8x-1)(x+1) =$
 $8x^2 + 8x - 1x - 1 =$
 $8x^2 + 7x - 1 =$

107. Simplify $(2x-5)(3x+5) =$
 $6x^2 + 10x - 15x - 25 =$
 $6x^2 - 5x - 25 =$

108. Simplify $(2x+5)(3x-5) =$
 $6x^2 - 10x + 15x - 25 =$
 $6x^2 + 5x - 25 =$

(109) Simplify $X(X+2)(X+4) =$
 $X(X^2 + 4X + 2X + 8) =$
 $X(X^2 + 6X + 8) =$
 $X^3 + 6X^2 + 8X =$

29

(110) Simplify $2X(X+2)(X-8) =$
 $2X(X^2 - 8X + 2X - 16) =$
 $2X(X^2 - 6X - 16) =$
 $2X^3 - 12X^2 - 32X =$

(111) Factor $X^2 - Y^2 =$ $a^2 - b^2 = (a+b)(a-b)$
 $(X+Y)(X-Y) =$

(112) Factor $a^2 - b^2 =$ $a^2 - b^2 = (a+b)(a-b)$
 $(a+b)(a-b) =$

(113) Factor $X^2 - 25 =$ $a^2 - b^2 = (a+b)(a-b)$
 $(X)^2 - (5)^2 =$
 $(X+5)(X-5) =$

(114) Factor $X^2 - 16Y^2 =$ $a^2 - b^2 = (a+b)(a-b)$
 $(X)^2 - (4Y)^2 =$
 $(X+4Y)(X-4Y) =$

115 Factor $100x^2 - 9y^2 =$

$a^2 - b^2 = (a+b)(a-b)$

$(10x)^2 - (3y)^2 =$

$(10x+3y)(10x-3y) =$

27

116

Factor

$\frac{x^2}{16} - \frac{y^2}{25} =$

$a^2 - b^2 = (a+b)(a-b)$

$(\frac{x}{4})^2 - (\frac{y}{5})^2 =$

$(\frac{x}{4} + \frac{y}{5})(\frac{x}{4} - \frac{y}{5}) =$

117

Factor

$\frac{9x^2}{16} - 25 =$

$a^2 - b^2 = (a+b)(a-b)$

$(\frac{3x}{4})^2 - (5)^2 =$

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

118

Factor

$\frac{9x^2}{16} - \frac{25}{49} =$

$a^2 - b^2 = (a+b)(a-b)$

$(\frac{3x}{4})^2 - (\frac{5}{7})^2 =$

$(\frac{3x}{4} + \frac{5}{7})(\frac{3x}{4} - \frac{5}{7}) =$

119

Factor

$\frac{x^2}{9} - 25 =$

$a^2 - b^2 = (a+b)(a-b)$

$(\frac{x}{3})^2 - (5)^2 =$

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

(120) Factor $\frac{9x^2}{16} - \frac{25y^2}{49} =$ $a^2 - b^2 = (a+b)(a-b)$

$$\left(\frac{3x}{4}\right)^2 - \left(\frac{5y}{7}\right)^2 =$$

$$\left(\frac{3x}{4} + \frac{5y}{7}\right)\left(\frac{3x}{4} - \frac{5y}{7}\right) =$$

28.

(121) Factor $x^2 + 6x + 8 =$

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

$$\begin{array}{l} 8 \cdot 1 \\ 2 \cdot 4 \end{array}$$

(122) Factor $x^2 - 6x + 8 =$

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

$$\begin{array}{l} 8 \cdot 1 \\ 2 \cdot 4 \end{array}$$

(123) Factor $x^2 - 6x - 16 =$

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

$$\begin{array}{l} 16 \cdot 1 \\ 2 \cdot 8 \\ 4 \cdot 4 \end{array}$$

(124) Factor $x^2 + 6x - 16 =$

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

$$\begin{array}{l} 16 \cdot 1 \\ 2 \cdot 8 \\ 4 \cdot 4 \end{array}$$

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

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

$$1 \cdot 7$$

(126) Factor $x^2 + 6x - 7 =$

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

$$1 \cdot 7$$

(127.) Factor $x^2 - x - 12 =$

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

12.1

6.2

3.4

(128.) Factor $x^2 + x - 12 =$

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

12.1

6.2

3.4

(129.) Factor $x^2 - 7x + 12 =$

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

12.1

6.2

3.4

(130.) Factor $x^2 - x - 2 =$

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

2.1

(131.) Factor $x^2 + x - 2 =$

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

2.1

(132.) Factor $x^2 - 3x + 2 =$

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

2.1

(133.) Factor $x^2 + 3x + 2 =$

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

2.1

(134.) Factor $2x^2 + 5x - 3 =$

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

2.1

1.3

(135.) Factor $2x^2 - 5x - 3 =$

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

2.1

1.3

29.

136.

Factor $12x^2 + x - 6 =$

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

12.1
6.2
3.4

6.1
2.3

30.

137.

Factor $12x^2 - x - 6 =$

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

12.1
6.2
3.4

6.1
2.3

138.

Factor $3x^2 - 13x - 10 =$

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

3.1

10.1
2.5

139.

Factor $3x^2 + 13x - 10 =$

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

3.1

10.1
2.5

140.

Factor $8x^2 - 7x - 1 =$

$$(8x+1)(x-1) =$$

8.1
2.4

1.1

141.

Factor $8x^2 + 7x - 1 =$

$$(8x-1)(x+1) =$$

8.1
2.4

1.1

142.

Factor $6x^2 - 5x - 25 =$

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

6.1
2.3

25.1
5.5

143.

Factor $6x^2 - 25x + 25 =$

$$(2x-5)(3x-5) =$$

6.1
2.3

25.1
5.5

144.

Factor $2x^2 + 12x + 16 =$

$$2(x^2 + 6x + 8) =$$

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

8.1
2.4

(145) Factor $X^3 + 6X^2 + 8X =$

$$X(X^2 + 6X + 8) =$$

8.1
2.4

31.

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

(146) Factor $2X^3 + 12X^2 + 16X =$

$$2X(X^2 + 6X + 8) =$$

8.1
2.4

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

(147) Factor $2X^3 - 12X^2 - 32X =$

$$2X(X^2 - 6X - 16) =$$

16.1
2.8
8.4

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

(148) Factor GCF $3X^3 - 18X^2 + 3X =$

$$3X(X^2 - 6X + 1) =$$

(149) Solve $X^2 + 6X + 8 = 0$

8.1
2.4

$$\text{Set } (X + 2)(X + 4) = 0$$

$$X + 2 = 0 \quad \text{OR} \quad X + 4 = 0$$

$$X + 2 - 2 = 0 - 2 \quad \text{OR} \quad X + 4 - 4 = 0 - 4$$

$$X = -2$$

$$\text{OR } X = -4$$

(150) Solve

$$X^2 - 6X + 8 = 0$$

8.1
2.4

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

$$\text{Set } X - 2 = 0 \quad \text{OR} \quad X - 4 = 0$$

$$X - 2 + 2 = 0 + 2 \quad \text{OR} \quad X - 4 + 4 = 0 + 4$$

$$X = 2$$

$$\text{OR } X = 4$$

(151) Solve $x^2 - 6x - 16 = 0$

$$(x + 2)(x - 8) = 0$$

$$\begin{array}{r} 16.1 \\ 8.2 \\ \hline 4.4 \end{array}$$

32

Set $x + 2 = 0$ OR $x - 8 = 0$

$$x + 2 - 2 = 0 - 2 \quad \text{OR} \quad x - 8 + 8 = 0 + 8$$

$$x = -2 \quad \text{OR} \quad x = 8$$

(152) Solve $x^2 + 6x - 16 = 0$

$$(x - 2)(x + 8) = 0$$

$$\begin{array}{r} 16.1 \\ 2.8 \\ \hline 4.8 \end{array}$$

Set $x - 2 = 0$ OR $x + 8 = 0$

$$x - 2 + 2 = 0 + 2 \quad \text{OR} \quad x + 8 - 8 = 0 - 8$$

$$x = 2 \quad \text{OR} \quad x = -8$$

(153) Solve $x^2 - 6x - 7 = 0$

$$(x + 1)(x - 7) = 0$$

$$\begin{array}{r} 1.7 \\ 1.7 \\ \hline 1.7 \end{array}$$

Set $x + 1 = 0$ OR $x - 7 = 0$

$$x + 1 - 1 = 0 - 1 \quad \text{OR} \quad x - 7 + 7 = 0 + 7$$

$$x = -1 \quad \text{OR} \quad x = 7$$

(154) Solve $x^2 + 6x - 7 = 0$

$$(x - 1)(x + 7) = 0$$

$$\begin{array}{r} 1.7 \\ 1.7 \\ \hline 1.7 \end{array}$$

Set $x - 1 = 0$ OR $x + 7 = 0$

$$x - 1 + 1 = 0 + 1 \quad \text{OR} \quad x + 7 - 7 = 0 - 7$$

$$x = 1 \quad \text{OR} \quad x = -7$$

(155) Solve $x^2 - x - 12 = 0$ 12:1
6:2
3:4

$$(x+3)(x-4) = 0$$

Set $x+3=0$ OR $x-4=0$

$$x+3-3=0-3 \text{ OR } x-4+4=0+4$$

$x = -3$ OR $x = 4$

33.

(156) Solve $x^2 + x = 12$

$$x^2 + x - 12 = 12 - 12$$

$$x^2 + x - 12 = 0$$

$$(x-3)(x+4) = 0$$

Set $x-3=0$ OR $x+4=0$

$$x-3+3=0+3 \text{ OR } x+4-4=0-4$$

$x = 3$ OR $x = -4$

(157) Solve $x^2 + 12 = 7x$

$$x^2 + 12 - 7x = 7x - 7x$$

$$x^2 + 12 - 7x = 0$$

$$x^2 - 7x + 12 = 0$$

$$(x-3)(x-4) = 0$$

Set $x-3=0$ OR $x-4=0$

$$x-3+3=0+3$$

$$\text{OR } x-4+4=0+4$$

$x = 3$

OR $x = 4$

(158) Solve $X^2 = X + 2$ (2.1)

$$X^2 - X - 2 = 0$$

$$(X + 1)(X - 2) = 0$$

Set $X + 1 = 0$ OR $X - 2 = 0$

$$X + 1 - 1 = 0 - 1 \quad \text{OR} \quad X - 2 + 2 = 0 + 2$$

$X = -1$ OR $X = 2$

34

(159) Solve $X(X + 1) = 2$

$$X^2 + 1X = 2$$

$$X^2 + X = 2$$

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

$$(X - 1)(X + 2) = 0$$

Set $X - 1 = 0$ OR $X + 2 = 0$

$$X - 1 + 1 = 0 + 1 \quad \text{OR} \quad X + 2 - 2 = 0 - 2$$

$X = 1$ OR $X = -2$

(160) Solve $X^2 - 3X = -2$

$$X^2 - 3X + 2 = 0$$

$$(X - 1)(X - 2) = 0$$

Set $X - 1 = 0$ OR $X - 2 = 0$

$$X - 1 + 1 = 0 + 1 \quad \text{OR} \quad X - 2 + 2 = 0 + 2$$

$X = 1$ OR $X = 2$

(161.)

Solve

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

$$x^2 + 2 + 3x = 0$$

$$x^2 + 3x + 2 = 0$$

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

$$\text{Set } x+1=0 \text{ OR } x+2=0$$

$$x+1-1=0-1 \text{ OR } x+2-2=0-2$$

$$x = -1 \text{ OR } x = -2$$

(2.1)

35.

(162.)

Solve

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

$$(2x+1)(x-3) = 0$$

$$\text{Set } 2x+1=0 \text{ OR } x-3=0$$

$$2x+1-1=0-1 \text{ OR } x-3+3=0+3$$

$$2x = -1 \text{ OR } x = 3$$

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

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

(2.1)

(3.1)

(163.)

Solve

$$12x^2 - x - 6 = 0$$

$$(3x+2)(4x-3) = 0$$

$$\text{Set } 3x+2=0 \text{ OR } 4x-3=0$$

$$3x+2-2=0-2 \text{ OR } 4x-3+3=0+3$$

$$3x = -2 \text{ OR } 4x = 3$$

$$\frac{3x}{3} = \frac{-2}{3} \text{ OR } \frac{4x}{4} = \frac{3}{4}$$

$$x = -\frac{2}{3} \text{ OR } x = \frac{3}{4}$$

12.1
6.2
3.46.1
2.3

save
 (164) $3x^2 + 13x - 10 = 0$
 $(3x-2)(x+5) = 0$

Set $3x-2=0$ OR $x+5=0$

$3x-2+2=0+2$ OR $x+5-5=0-5$

$3x=2$ OR $x=-5$

$\frac{3x}{3} = \frac{2}{3}$

$x = \frac{2}{3}$

OR Use the Quadratic formula

$3x^2 + 13x - 10 = 0$

$a=3$ $b=13$ $c=-10$

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

$x = \frac{-(13) \pm \sqrt{(13)^2 - 4(3)(-10)}}{2(3)}$

$x = \frac{-13 \pm \sqrt{169 + 120}}{6}$

$x = \frac{-13 \pm \sqrt{289}}{6}$

$x = \frac{-13 \pm 17}{6}$

$x = \frac{-13-17}{6}$ OR $x = \frac{-13+17}{6}$

$x = \frac{-30}{6}$ OR $x = \frac{4}{6}$

$x = -5$ OR $x = \frac{2(2)}{2(3)}$

$x = \frac{2}{3}$

3.1

10.1
2.5

36.

165. Solve $8x^2 + 7x - 1 = 0$

$$(8x-1)(x+1)=0$$

Set $8x-1=0$ OR $x+1=0$

$$8x-1+1=0+1 \quad \text{OR} \quad x+1-1=0-1$$

$$8x=1$$

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

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

$$\text{OR} \quad x = -1$$

8.1

2.4

1.1

37.

OR use the Quadratic formula

$$8x^2 + 7x - 1 = 0$$

$$a=8, b=7, c=-1$$

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

$$x = \frac{-(-7) \pm \sqrt{(-7)^2 - 4(8)(-1)}}{2(8)}$$

$$x = \frac{-7 \pm \sqrt{49 + 32}}{16}$$

$$x = \frac{-7 \pm \sqrt{81}}{16}$$

$$x = \frac{-7 \pm 9}{16}$$

$$x = \frac{-7-9}{16}$$

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

$$x = -1$$

$$\text{OR} \quad x = \frac{-7+9}{16}$$

$$\text{OR} \quad x = \frac{2}{16}$$

$$\text{OR} \quad x = \frac{2(1)}{2(8)}$$

$$\text{OR} \quad x = \frac{1}{8}$$

166. Solve $6x^2 - 5x = 25$
 $6x^2 - 5x - 25 = 0$
 $(2x-5)(3x+5) = 0$

Set $2x-5=0$ OR $3x+5=0$

$2x-5+5=0+5$ OR $3x+5-5=0-5$

$2x=5$ OR $3x=-5$

$\frac{2x}{2} = \frac{5}{2}$ OR $\frac{3x}{3} = \frac{-5}{3}$

$x = \frac{5}{2}$ OR $x = -\frac{5}{3}$

OR Use the Quadratic Formula

$6x^2 - 5x = 25$

$6x^2 - 5x - 25 = 0$

$a=6, b=-5, c=-25$

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

$x = \frac{-(-5) \pm \sqrt{(-5)^2 - 4(6)(-25)}}{2(6)}$

$x = \frac{5 \pm \sqrt{25 + 600}}{12}$

$x = \frac{5 \pm \sqrt{625}}{12}$

$x = \frac{5 \pm 25}{12}$

$x = \frac{5-25}{12}$ OR $x = \frac{5+25}{12}$

$x = \frac{-20}{12}$ OR $x = \frac{30}{12}$

$6 \cdot 1$
 $2 \cdot 3$

$25 \cdot 1$
 $5 \cdot 5$

38

$x = -\frac{4(5)}{4(3)}$ OR $x = \frac{6(5)}{6(2)}$

$x = -\frac{5}{3}$ OR $x = \frac{5}{2}$

(167) Solve $x^2 = 25$

$$\sqrt{x^2} = \pm\sqrt{25}$$

$$x = \pm 5$$

$$x = -5 \text{ OR } x = 5$$

(168)

Solve $x^2 = 2$

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

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

$$x = -\sqrt{2} \text{ OR } x = \sqrt{2}$$

(169)

Solve $(x+2)^2 = 9$

$$\sqrt{(x+2)^2} = \pm\sqrt{9}$$

$$x+2 = \pm 3$$

$$x+2 = -3 \text{ OR } x+2 = 3$$

$$x+2-2 = -3-2 \text{ OR } x+2-2 = 3-2$$

$$x = -5 \text{ OR } x = 1$$

(170)

Solve $(x-4)^2 = 25$

$$\sqrt{(x-4)^2} = \pm\sqrt{25}$$

$$x-4 = \pm 5$$

$$x-4 = -5 \text{ OR } x-4 = 5$$

$$x-\cancel{4}+\cancel{4} = -5+4 \text{ OR } x-\cancel{4}+\cancel{4} = 5+4$$

$$x = -1 \text{ OR } x = 9$$

39.

(171.)

Solve $(x+2)^2 = 5$

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

$$x+2 = \pm\sqrt{5}$$

$$x+2 = -\sqrt{5} \text{ OR } x+2 = \sqrt{5}$$

$$x+2-x = -\sqrt{5}-2 \text{ OR } x+x-x = \sqrt{5}-2$$

$$x = -\sqrt{5}-2 \text{ OR } x = \sqrt{5}-2$$

$$x = -2 - \sqrt{5} \text{ OR }$$

$$x = -2 + \sqrt{5}$$



(172.)

Solve

$$\frac{x}{9} = \frac{1}{x}$$

$$x(x) = 9(1)$$

$$x^2 = 9$$

$$\sqrt{x^2} = \pm\sqrt{9}$$

$$x = \pm 3$$

$$x = -3 \text{ OR }$$

$$x = 3$$

(173.)

Solve

$$\frac{x}{3} = \frac{1}{x}$$

$$x(x) = 3(1)$$

$$x^2 = 3$$

$$\sqrt{x^2} = \pm\sqrt{3}$$

$$x = \pm\sqrt{3}$$

$$x = -\sqrt{3} \text{ OR }$$

$$x = \sqrt{3}$$

(174) Solve $\sqrt{x} = 5$

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

$$x = 25$$

(175) Solve $\sqrt{x+3} = 5$

$$(\sqrt{x+3})^2 = (5)^2$$

$$x+3 = 25$$

$$x + \cancel{3} - \cancel{3} = 25 - 3$$

$$x = 22$$

(176) Solve $\sqrt{x-2} = 8$

$$(\sqrt{x-2})^2 = (8)^2$$

$$x-2 = 64$$

$$x - \cancel{2} + \cancel{2} = 64 + 2$$

$$x = 66$$

(177) Solve $\sqrt{x} + 2 = 5$

$$\sqrt{x} + \cancel{2} - \cancel{2} = 5 - 2$$

$$\sqrt{x} = 3$$

$$(\sqrt{x})^2 = (3)^2$$

$$x = 9$$

(178) Solve

$$\sqrt{x} - 2 = 7$$

$$\sqrt{x} - \cancel{2} + \cancel{2} = 7 + 2$$

$$\sqrt{x} = 9$$

$$(\sqrt{x})^2 = (9)^2$$

$$x = 81$$



(179) Find t if $t = \frac{\sqrt{x}}{2}$ and $x = 32$

$$t = \frac{\sqrt{32}}{2}$$

$$t = \frac{\sqrt{16 \times 2}}{2}$$

$$t = \frac{\sqrt{16} \sqrt{2}}{2}$$

$$t = \frac{4\sqrt{2}}{2}$$

$$t = 2\sqrt{2}$$

Primes 2, 3, 5, 7

$$\begin{array}{r} 2 \overline{) 32} \\ 2 \overline{) 16} \\ 2 \overline{) 8} \\ 2 \overline{) 4} \\ 2 \overline{) 2} \\ 0 \end{array}$$

$$\begin{array}{r} 4 \overline{) 32} \\ 4 \overline{) 24} \\ 4 \overline{) 8} \\ 0 \end{array}$$

(180) Find t if $t = \frac{\sqrt{x}}{2}$ and $x = 8$

$$t = \frac{\sqrt{8}}{2}$$

$$t = \frac{\sqrt{4 \times 2}}{2}$$

$$t = \frac{\sqrt{4} \sqrt{2}}{2}$$

$$t = \frac{2\sqrt{2}}{2}$$

$$t = \sqrt{2}$$

Primes 2, 3, 5, 7

$$\begin{array}{r} 2 \overline{) 8} \\ 2 \overline{) 4} \\ 2 \overline{) 2} \\ 0 \end{array}$$

(181) Find x if $y = mx^2$

$$y = mx^2$$

$$\frac{y}{m} = \frac{mx^2}{m}$$

$$\frac{y}{m} = x^2$$

$$\pm \sqrt{\frac{y}{m}} = \sqrt{x^2}$$

$$\pm \sqrt{\frac{y}{m}} = x$$

$$x = -\sqrt{\frac{y}{m}} \text{ or } x = \sqrt{\frac{y}{m}}$$

(182)

Find X if $Y = 5mX^2$

$$Y = 5mX^2$$

$$\frac{Y}{5m} = \frac{5mX^2}{5m}$$

$$\frac{Y}{5m} = X^2$$

$$\pm \sqrt{\frac{Y}{5m}} = \sqrt{X^2}$$

$$\pm \sqrt{\frac{Y}{5m}} = X$$

$$X = -\sqrt{\frac{Y}{5m}} \text{ OR } X = \sqrt{\frac{Y}{5m}}$$

$$X = \sqrt{\frac{Y}{5m}}$$

(183)

Find X if $Y = \frac{1}{5}mX^2$

$$Y = \frac{1}{5}mX^2$$

$$5Y = 5\left(\frac{1}{5}\right)mX^2$$

$$5Y = mX^2$$

$$\frac{5Y}{m} = \frac{mX^2}{m}$$

$$\frac{5Y}{m} = X^2$$

$$\pm \sqrt{\frac{5Y}{m}} = \sqrt{X^2}$$

$$\pm \sqrt{\frac{5Y}{m}} = X$$

$$X = -\sqrt{\frac{5Y}{m}} \text{ OR } X = \sqrt{\frac{5Y}{m}}$$

$$X = \sqrt{\frac{5Y}{m}}$$

(184) Find X if $Y = \frac{1}{11}mx^2$

$$Y = \frac{1}{11}mx^2$$

$$11Y = 11\left(\frac{1}{11}\right)mx^2$$

$$11Y = mx^2$$

$$\frac{11Y}{m} = \frac{mx^2}{m}$$

$$\frac{11Y}{m} = x^2$$

$$\pm\sqrt{\frac{11Y}{m}} = \sqrt{x^2}$$

$$\pm\sqrt{\frac{11Y}{m}} = x$$

$$X = -\sqrt{\frac{11Y}{m}} \text{ OR}$$

$$X = \sqrt{\frac{11Y}{m}}$$

(185) Solve for X

$$X - Y = 6$$

$$X + Y = 8$$

$$2X = 14$$

$$\frac{2X}{2} = \frac{14}{2}$$

$$X = 7$$

(186) Solve for y

$$X - y = 4$$

$$X = 2y$$

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

$$2y - y = 4$$

$$2y - 1y = 4$$

$$y = 4$$



(187)

Solve for X

$$X + y = 6$$

$$X - y = 2$$

$$2X = 8$$

$$\frac{2X}{2} = \frac{8}{2}$$

$$X = 4$$



(188)

Solve for X

$$X + 2y = 9$$

$$X = y$$

$$X + 2(X) = 9$$

$$X + 2X = 9$$

$$1X + 2X = 9$$

$$3X = 9$$

$$\frac{3X}{3} = \frac{9}{3}$$

$$X = 3$$

(189)

Solve for X

$$X + y = 50$$

$$X - y = 0$$

$$2X = 50$$

$$\frac{2X}{2} = \frac{50}{2}$$

$$X = 25$$

(190) Solve for X

$$2x + 3y = 5$$

$$4x - 2y = 2$$

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

$$(4x - 2y = 2) (3)$$

$$4x + 6y = 10$$

$$12x - 6y = 6$$

$$16x = 16$$

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

$$x = 1$$

(191) Solve for X

$$3x + 2y = 5$$

$$4x + 7y = 11$$

$$(3x + 2y = 5) (-7)$$

$$(4x + 7y = 11) (2)$$

$$-21x - 14y = -35$$

$$8x + 14y = 22$$

$$-13x = -13$$

$$\frac{-13x}{-13} = \frac{-13}{-13}$$

$$x = 1$$

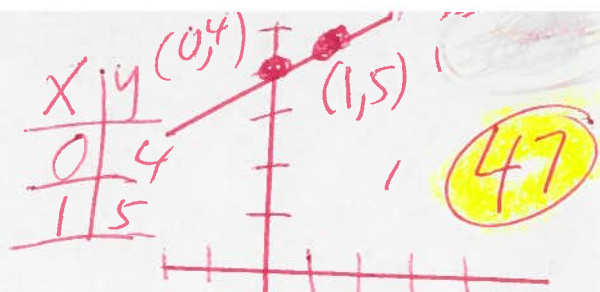


192 Graph

$$y = (0) + 4$$
$$y = 0 + 4$$
$$y = 4$$

$$y = x + 4$$

$$y = (1) + 4$$
$$y = 1 + 4$$
$$y = 5$$



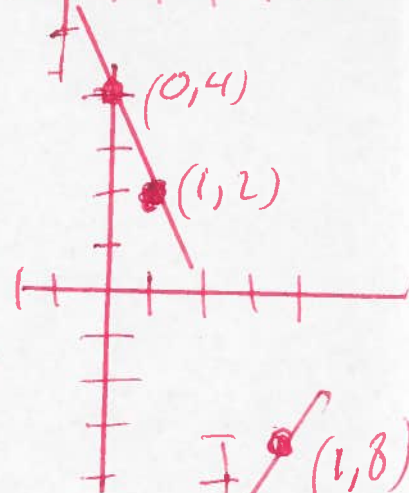
193 Graph

$$y = -2(0) + 4$$
$$y = 0 + 4$$
$$y = 4$$

$$y = -2x + 4$$

$$y = -2(1) + 4$$
$$y = -2 + 4$$
$$y = 2$$

X	y
0	4
1	2



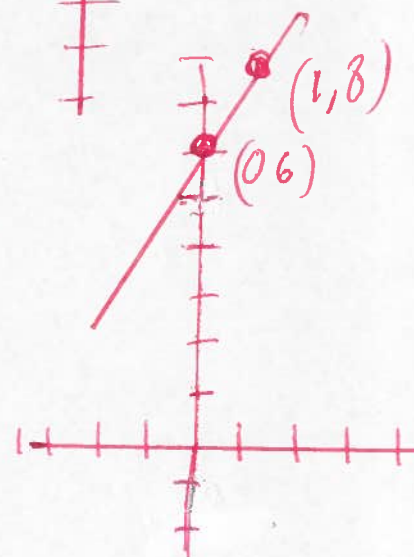
194 Graph

$$y = 2(0) + 6$$
$$y = 0 + 6$$
$$y = 6$$

$$y = 2x + 6$$

$$y = 2(1) + 6$$
$$y = 2 + 6$$
$$y = 8$$

X	y
0	6
1	8



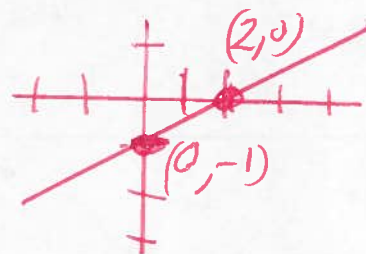
195 Graph

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

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

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

X	y
0	-1
2	0



196 Graph

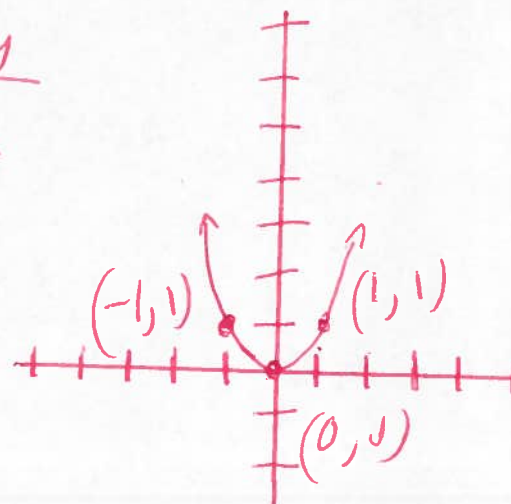
$$y = (-1)^2$$
$$y = (-1)(-1)$$
$$y = 1$$

$$y = x^2$$

$$y = (0)^2$$
$$y = (0)(0)$$
$$y = 0$$

$$y = (1)^2$$
$$y = (1)(1)$$
$$y = 1$$

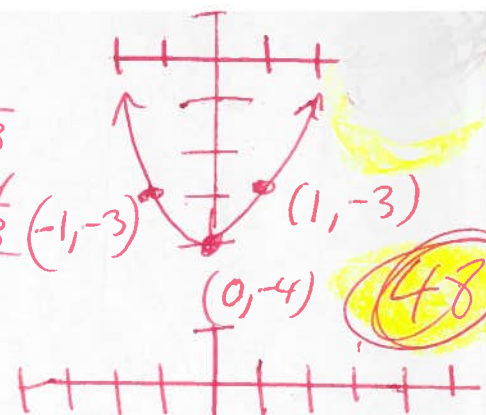
X	y
-1	1
0	0
1	1



197 Graph $y = x^2 - 4$

$$\begin{array}{lll} y = (-1)^2 - 4 & y = (0)^2 - 4 & y = (1)^2 - 4 \\ y = (-1)(-1) - 4 & y = (0)(0) - 4 & y = (1)(1) - 4 \\ y = 1 - 4 & y = 0 - 4 & y = 1 - 4 \\ y = -3 & y = -4 & y = -3 \end{array}$$

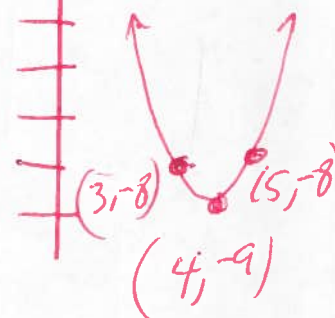
x	y
-1	-3
0	-4
1	-3



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

$$\begin{array}{lll} y = (3-4)^2 - 9 & y = (4-4)^2 - 9 & y = (5-4)^2 - 9 \\ y = (-1)^2 - 9 & y = (0)^2 - 9 & y = (1)^2 - 9 \\ y = (-1)(-1) - 9 & y = (0)(0) - 9 & y = (1)(1) - 9 \\ y = 1 - 9 & y = 0 - 9 & y = 1 - 9 \\ y = -8 & y = -9 & y = -8 \end{array}$$

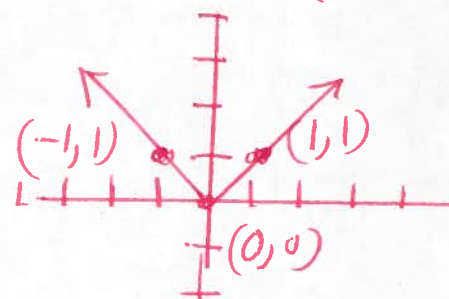
x	y
3	-8
4	-9
5	-8



199 Graph $y = |x|$

$$\begin{array}{lll} y = |-1| & y = |0| & y = |1| \\ y = 1 & y = 0 & y = 1 \end{array}$$

x	y
-1	1
0	0
1	1



200 Graph $y = |x-2| + 4$

$$\begin{array}{lll} y = |1-2| + 4 & y = |2-2| + 4 & y = |3-2| + 4 \\ y = |-1| + 4 & y = |0| + 4 & y = |1| + 4 \\ y = 1 + 4 & y = 0 + 4 & y = 1 + 4 \\ y = 5 & y = 4 & y = 5 \end{array}$$

x	y
1	5
2	4
3	5

