



$$6) (-3)^2 =$$

$$(-3)(-3) =$$

$$(9) =$$

$$9 =$$

$$7) (-2)^3 =$$

$$(-2)(-2)(-2) =$$

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

$$(-8) =$$

$$-8 =$$

$$8) (-10) + 8 \div 2 =$$

$$(-10) + 4 =$$

$$-10 + 4 =$$

$$-6 =$$

$$9) 8 + 5 \cdot 3 - 13 =$$

$$8 + 15 - 13 =$$

$$23 - 13 =$$

$$10 =$$

$$\textcircled{10} \quad 3(-8) - (-14) =$$
$$-24 + 14 =$$

$$\textcircled{-10 =}$$

$$\textcircled{11} \quad |29 - 53| \div 3 =$$

$$|-24| \div 3 =$$

$$(24) \div 3 =$$

$$\textcircled{8 =}$$

$$\textcircled{12} \quad (-17 - 37) \div 18 - 28 =$$

$$(-54) \div 18 - 28 =$$

$$-3 - 28 =$$

$$\textcircled{-31 =}$$

$$\textcircled{13} \quad 9(-10) \div [4(-9) - 7(-5)] =$$

$$9(-10) \div [-36 + 35] =$$

$$9(-10) \div [-1] =$$

$$-90 \div [-1] =$$

$$\textcircled{90 =}$$

$$(14) \quad 4x - 3y - 12z = \quad , \quad x = -3, \quad y = 4, \quad z = -1$$

(4)

$$4(-3) - 3(4) - 12(-1) =$$

$$-12 - 12 + 12 =$$

$$-24 + 12 =$$

$$\underline{-12 =}$$

$$(15) \quad x^2 - y = \quad , \quad x = -2, \quad y = 6$$

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

$$(-2)(-2) - (6) =$$

$$(4) - (6) =$$

$$4 - 6 =$$

$$\underline{-2 =}$$

$$(16) \quad d - 7 = -12$$

$$d - x + x = -12 + 7$$

$$\underline{d = -5}$$

17

$$-3z = 36$$

$$\frac{-3z}{-3} = \frac{36}{-3}$$

$$z = -12$$

18

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

$$\frac{3}{\cancel{3}} \left( \frac{n}{\cancel{3}} \right) = \frac{3}{1} \left( \frac{-6}{1} \right)$$

$$n = -18$$

$$n = -18$$

19

$$-8x = 0$$

$$\frac{-\cancel{8}x}{-\cancel{8}} = \frac{0}{-\cancel{8}}$$

$$x = 0$$

20

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

$$\frac{-\cancel{8}}{\cancel{1}} \left( \frac{x}{-\cancel{8}} \right) = \frac{-\cancel{8}}{1} \left( \frac{-7}{1} \right)$$

$$x = \frac{56}{1}$$

$$x = 56$$

51

$$\begin{aligned} 21) \quad & 3(a-6) = \\ & 3a - 18 = \end{aligned}$$

$$\begin{aligned} 22) \quad & -2(5z+3) = \\ & -10z - 6 = \end{aligned}$$

$$\begin{aligned} 23) \quad & 2(x+1) - 2 = \\ & 2x + 4 - 2 = \\ & 2x + 2 = \end{aligned}$$

$$\begin{aligned} 24) \quad & -5(7n-4) + 2n = \\ & -35n + 20 + 2n = \end{aligned}$$

$$-33n + 20 =$$

$$25) \quad 15y - 20y =$$

$$-5y =$$

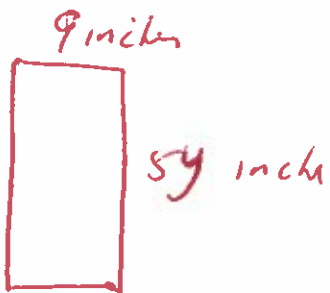
26

$$6y - 3(y - 3) + 4 =$$

$$6y - 3y + 9 + 4 =$$

$$3y + 13 =$$

27



Find Area

$$A = L \cdot W$$

$$A = (5y)(9)$$

$$A = 45y \text{ square inches}$$

28

Find area

$$L = 46 \text{ feet}, W = 36 \text{ feet}$$

$$A = LW$$

$$A = (46)(36)$$

$$A = 1656 \text{ square feet}$$

29

Find perimeter

$$L = 23 \text{ feet}, W = 21 \text{ feet}$$

$$P = 2L + 2W$$

$$P = 2(23) + 2(21)$$

$$P = 46 + 42$$

$$P = 88 \text{ feet}$$

30

$$3w - 5w = 14$$

$$-2w = 14$$

$$\frac{-2w}{-2} = \frac{14}{-2}$$

$$w = -7$$

31

$$42 = t + 6t$$

$$42 = 1t + 6t$$

$$42 = 7t$$

$$\frac{42}{7} = \frac{7t}{7}$$

$$6 = t$$

32

$$-4x - 4x = 29 - 5$$

$$-8x = 24$$

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

$$x = -3$$



33

$$2(4x - 3) = 9x$$

$$8x - 6 = 9x$$

$$8x - \cancel{6} + 6 = 9x + 6$$

$$8x = 9x + 6$$

$$8x - 9x = 9x + 6 - 9x$$

$$-1x = 6$$

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

$$x = -6$$

34

$$49y = 8(6y - 5)$$

$$49y = 48y - 40$$

$$49y - 48y = 48y - 40 - 48y$$

$$1y = -40$$

$$y = -40$$

35

$$3(y - 5) = y - 15$$

$$3y - 15 = y - 15$$

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

$$3y = y$$

$$3y = 1y$$

$$3y - 1y = 1y - 1y$$

$$3y = 0$$

$$\frac{3y}{3} = \frac{0}{3}$$

$$y = 0$$

36

$$3(7x-2) = 22x$$

$$21x - 6 = 22x$$

$$21x - \cancel{6} + \cancel{6} = 22x + 6$$

$$21x = 22x + 6$$

$$21x - 22x = 22x + 6 - 22x$$

$$-1x = 6$$

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

$$x = -6$$

37

$$\frac{-4}{7} \cdot \frac{3}{8}$$

$$\frac{(-1)(2)(2)}{7} \cdot \frac{3}{(2)(2)(2)} = \text{Kürze}$$

$$\frac{(-1)(\cancel{2})(\cancel{2})}{7} \cdot \frac{3}{(\cancel{2})(\cancel{2})(2)} =$$

$$\frac{-3}{14} =$$

38.

$$\frac{4}{7} \div \frac{13}{14} =$$

$$\frac{4}{7} \cdot \frac{14}{13} =$$

$$\frac{(2)(2)}{\cancel{7}} \cdot \frac{(2)(\cancel{7})}{13} =$$

$$\frac{8}{13} =$$

39.

$$\frac{1}{18} + \frac{11}{18} = \text{Primi, } 2, 3, 5, 7, \dots$$

$$\frac{1+11}{18} =$$

$$\frac{12}{18} =$$

$$\frac{(2)(2)(3)}{(2)(3)(3)} =$$

$$\frac{\cancel{(2)}(\cancel{2})(\cancel{3})}{(2)(3)(\cancel{3})} =$$

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

$$\begin{array}{r}
 2 \overline{) 12} \\
 \underline{2(6)} \\
 3 \overline{) 3} \\
 \underline{3} \\
 1
 \end{array}$$

$$\begin{array}{r}
 2 \overline{) 18} \\
 \underline{3(9)} \\
 3 \overline{) 3} \\
 \underline{3} \\
 1
 \end{array}$$

40

$$\frac{1}{5} + \frac{7}{10} = \text{LCD} = 10$$

12

$$\frac{1}{5} \left( \frac{2}{2} \right) + \frac{7}{10} =$$

$$\frac{2}{10} + \frac{7}{10} =$$

$$\frac{2+7}{10} =$$

$$\frac{9}{10} =$$

41

$$\frac{1}{4} - \frac{7}{10} =$$

$$\frac{1}{4} \left( \frac{5}{5} \right) - \frac{7}{10} \left( \frac{2}{2} \right) =$$

$$\frac{5}{20} - \frac{14}{20} =$$

$$\frac{5-14}{20} =$$

$$\frac{-9}{20} =$$

LCD

Prms 2, 3, 5, 7

$$2 \overline{) 4}$$

$$2 \overline{) 2}$$

1

$$4 = 2 \cdot 2$$

$$10 = 2 \cdot 5$$

$$2 \overline{) 10}$$

$$5 \overline{) 5}$$

1

$$\text{LCD} = 2 \cdot 2 \cdot 5$$

$$= 20$$

(13)

(42)

$$\frac{\frac{5}{7}}{\frac{5}{8}} =$$

$$\frac{5}{7} \cdot \frac{8}{5} = \text{Rewrite}$$

$$\frac{\cancel{5}}{7} \cdot \frac{8}{\cancel{5}} =$$

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

(43)

$$-35 = \frac{5}{17}x$$

$$\frac{17}{5} \left( \frac{-35}{1} \right) = \frac{17}{5} \left( \frac{5x}{17} \right)$$

$$\frac{(17)(-7)}{(5)} = x$$

$$17(-7) = x$$

$$-119 = x$$

(44)  $\frac{m}{6} = \frac{m}{5} + 2$  LCD = 30

$$\frac{m}{6} = \frac{m}{5} + \frac{2}{1}$$

$$\frac{m}{6}(30) = \frac{m}{5}(30) + \frac{2}{1}(30)$$

$$m(5) = m(6) + 2(30)$$

$$5m = 6m + 60$$

$$5m - 6m = 6m + 60 - 6m$$

$$-1m = 60$$

$$\frac{-1m}{-1} = \frac{60}{-1}$$

$$m = -60$$

(45)

$$-6.456 \times 1000 =$$

$$-6456. =$$

move decimal right  
3 times

(46)

$$\frac{99.678}{100} =$$

$$0.99678 =$$

move decimal left  
2 times

(14)

$$(47) \quad 3.4x - 48 = 1.8x + 8$$

$$3.4x - \cancel{48} + \cancel{48} = 1.8x + 8 + 48$$

$$3.4x = 1.8x + 56$$

$$3.4x - 1.8x = \cancel{1.8x} + 56 - \cancel{1.8x}$$

$$1.6x = 56$$

$$\frac{1.6x}{1.6} = \frac{56}{1.6}$$

$$x = 35$$

(15)

(48)

$$\frac{5}{8} = \frac{x}{16}$$

$$5(16) = 8(x) \text{ cross mult}$$

$$80 = 8x$$

$$\frac{80}{8} = \frac{8x}{8}$$

$$10 = x$$

49

$$\frac{13}{130} = \frac{20}{x}$$

$$13(x) = 130(20)$$

$$13x = 2600$$

$$\frac{13x}{13} = \frac{2600}{13}$$

$$x = 200$$

50

Write the percent as a decimal

$$77.8\% =$$

$$0.778 =$$

51

Write the decimal as a percent

$$0.21 =$$

$$21\% =$$

52

Write the fraction as a percent

$$\frac{7}{25} = \frac{x}{100}$$

$$7(100) = 25(x) \text{ cross mult}$$

$$700 = 25x$$

$$\frac{700}{25} = \frac{25x}{25}$$

$$28 = x$$

$$28\% = x$$



53

32% write as a decimal

17

0.32 =

32% written as a fraction simplified

32/100 =

Prime 2, 3, 5, 7

(2)(2)(2)(2)(2) / (2)(2)(5)(5) =

2(32) 2(100)
2(16) 2(50)
2(8) 5(25)
2(4) 5(5)
2(2) 1

8/25 =

54

A = P - PD P = \$589, D = 25% = .25

A = \$589 - (\$589)(.25)

A = \$589 - \$147.25 ← discount

A = \$441.75 ← Sale price

$$(55) A = P + PRT \quad P = 60,000, R = 7.5\% = 0.075, T = 10$$

$$A = 60,000 + 60,000(0.075)(10)$$

$$A = 60,000 + 45,000$$

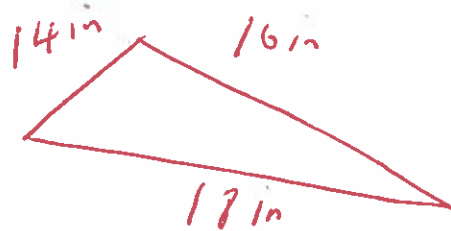
$$A = 60,000 + 45,000 \leftarrow \text{Interest paid on loan}$$

$$A = 105,000 \leftarrow \text{Total amount paid}$$

$$(56) P = S_1 + S_2 + S_3$$

$$P = 14 + 16 + 18$$

$$P = 48 \text{ inches}$$



$$(57) \text{ find Perimeter (Square)}$$

$$P = 2L + 2W$$

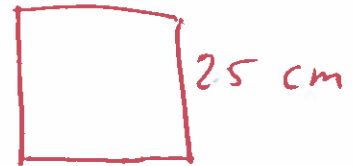
$$P = 2(25) + 2(25)$$

$$P = 50 + 50$$

$$P = 100 \text{ cm}$$

$$L = 25 \text{ cm}$$

$$W = 25 \text{ cm}$$



58.  $A = \pi r^2$

$$A = \pi (11.5)^2$$

$$A = \pi (11.5)(11.5)$$

$$A = \pi (132.25)$$

$A = 132.25\pi$  square inches ✓

OR

$$A = 3.14r^2 \quad \text{approx}$$

$$A = 3.14(11.5)^2$$

$$A = 3.14(11.5)(11.5)$$

$$A = 3.14(132.25)$$

$A = 415.265$  square inches ✓

59.  $-7(\widehat{x+8}) + 4 = -52$

$$-7x - 56 + 4 = -52$$

$$-7x - 52 = -52$$

$$-7x - \cancel{52} + \cancel{52} = -52 + 52$$

$$-7x = 0$$

$$\frac{-7x}{-7} = \frac{0}{-7}$$

$x = 0$

$$(60) \quad 3(5x-3) = 15x-9$$

$$15x-9 = 15x-9$$

$$15x-9+9 = 15x-9+9$$

$$15x = 15x$$

$$15x-15x = 15x-15x$$

$$0 = 0$$

The solution is all real numbers

$$(61) \quad \frac{x}{7} + 3 = \frac{x}{7}$$

$$\text{LCD} = 7$$

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

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

$$x(1) + 3(7) = x(1)$$

$$1x + 21 = 1x$$

$$1x + 21 - 21 = 1x - 21$$

$$1x = 1x - 21$$

$$1x - 1x = 1x - 21 - 1x$$

$$0 \neq -21$$

There is no solution

$$(62) \quad 5x + y = 10$$

$$y =$$

$$5x + y - 5x = 10 - 5x$$

$$y = 10 - 5x$$

$$\text{OR } y = -5x + 10$$

$$(63) \quad W = x + xyz$$

$$z =$$

$$W - x = x + xyz - x$$

$$W - x = xyz$$

$$\frac{W - x}{xy} = \frac{xyz}{xy}$$

$$\frac{W - x}{xy} = z$$

$$(64) \quad 2x < -4$$

$$\frac{2x}{2} < \frac{-4}{2}$$

$$x < -2$$



$$(-\infty, -2)$$

(65)

$$-7x \leq 28$$

$$\frac{-7x}{-7} \geq \frac{28}{-7}$$

divide by a negative and  
turn alligator around

(22)

$$x \geq -4$$

$$[-4, \infty)$$



(66)

$$-4x + 2 \geq 2(5 - x)$$

$$-4x + 2 \geq 10 - 2x$$

$$-4x + x - x \geq 10 - 2x - 2$$

$$-4x \geq -2x + 8$$

$$-4x + 2x \geq -2x + 8 + 2x$$

$$-2x \geq 8$$

$$\frac{-2x}{-2} \leq \frac{8}{-2}$$

divide by a negative  
turn alligator around

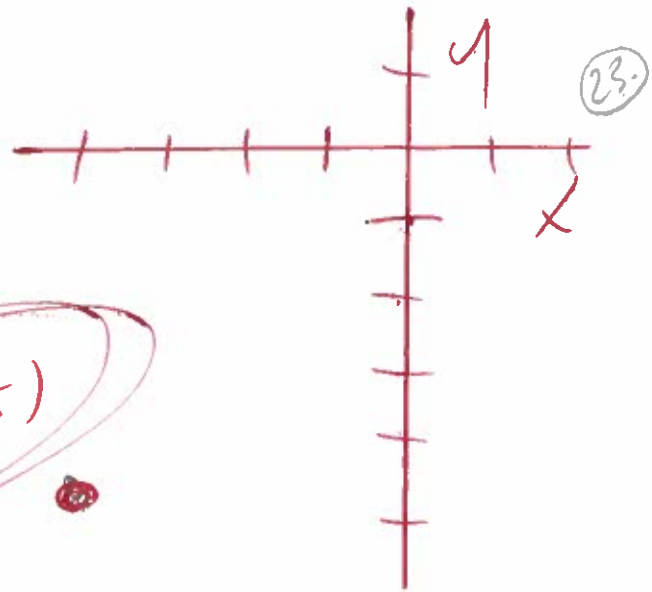
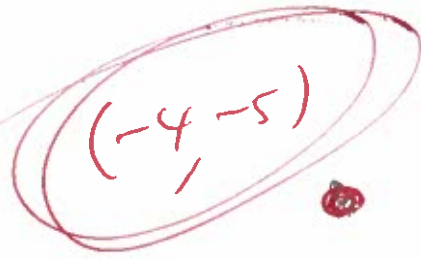
$$x \leq -4$$



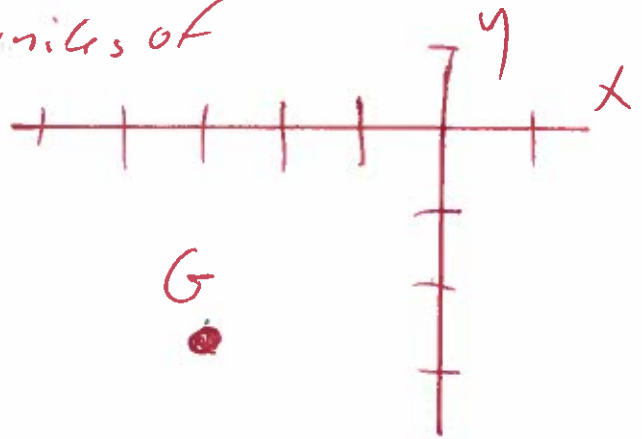
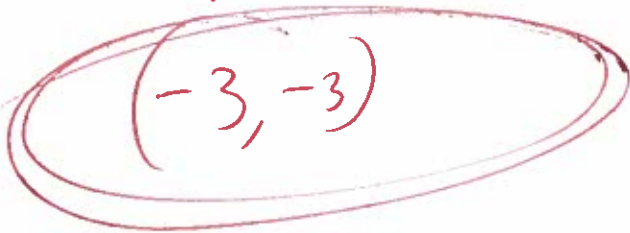
$$(-\infty, -4]$$

67)  $(-4, -5)$  graph

Quadrant 3



68) Find the x and y coordinates of point G



69)  $y = \frac{1}{6}x + 7$

$y = \frac{1}{6}(0) + 7$

$y = 0 + 7$

$y = 7$

$y = \frac{1}{6}(8) + 7$

$y = 1 + 7$

$y = 8$

$0 = \frac{1}{6}x + 7$

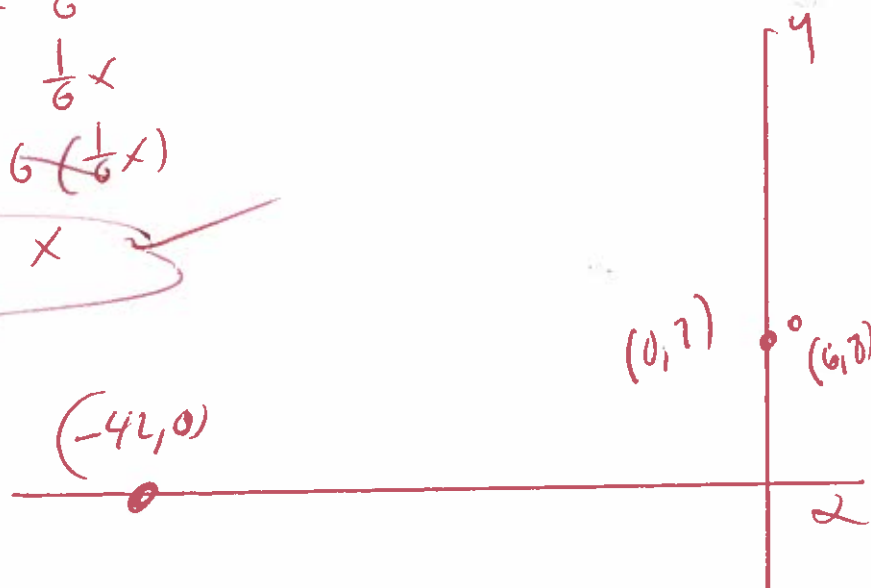
$0 - 7 = \frac{1}{6}x + 7 - 7$

$-7 = \frac{1}{6}x$

$6(-7) = 6(\frac{1}{6}x)$

$-42 = x$

|     |     |
|-----|-----|
| x   | y   |
| 0   | 7 ✓ |
| 6   | 8 ✓ |
| -42 | 0   |





70)  $y = -4x + 4$

$y = -4(0) + 4$

$y = 0 + 4$

$y = 4$

$y = -4(1) + 4$

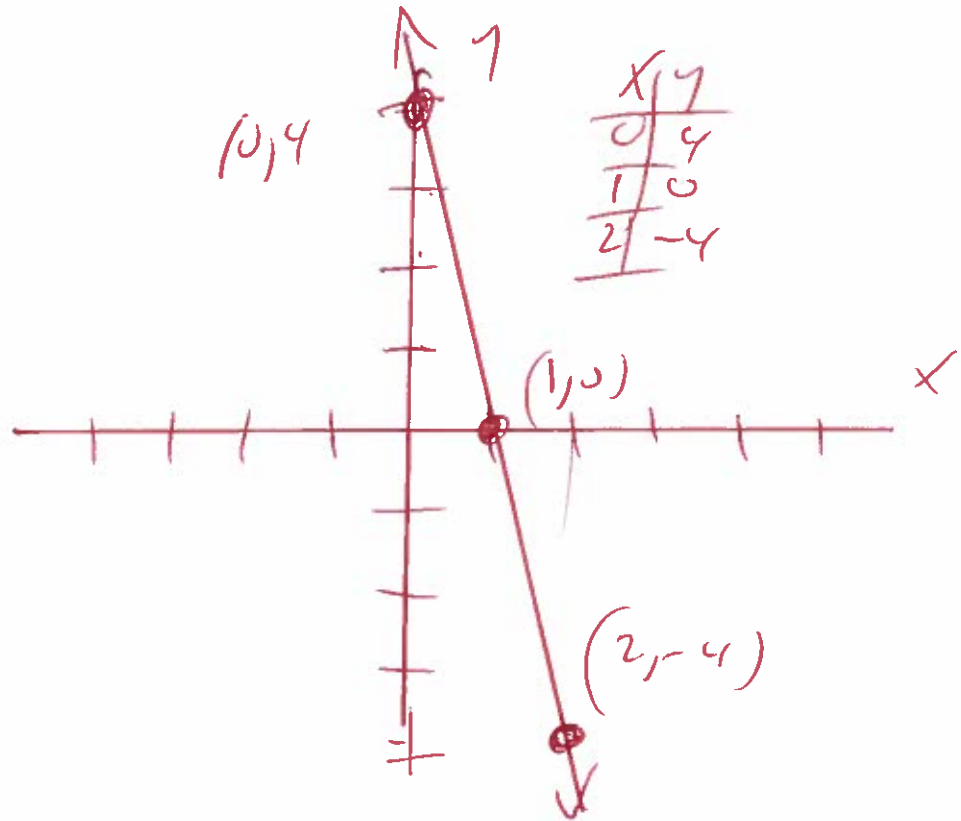
$y = -4 + 4$

$y = 0$

$y = -4(2) + 4$

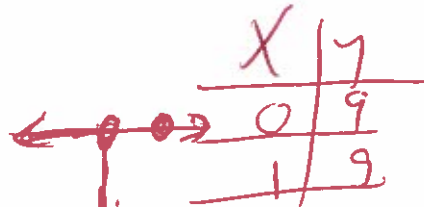
$y = -8 + 4$

$y = -4$



(24)

71)  $y = 9$  graph





72.  $y = -\frac{3}{2}x - 3$  graph

$y = -\frac{3}{2}(0) - 3$

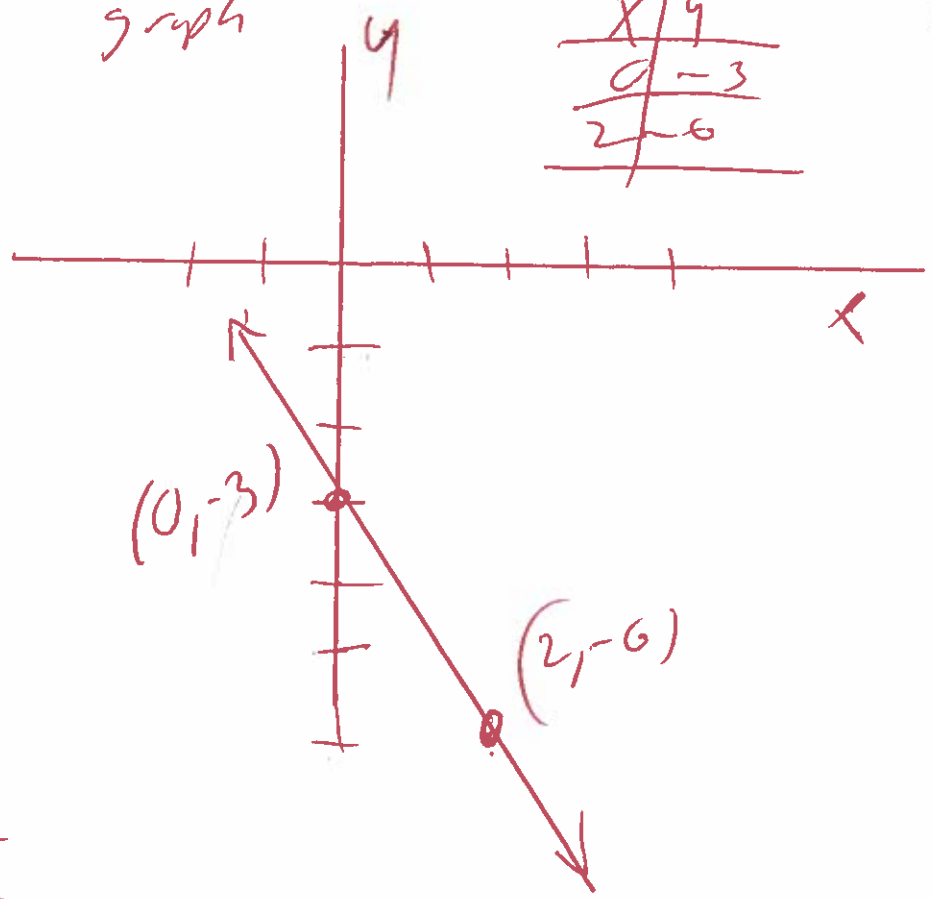
$y = 0 - 3$

$y = -3$

$y = -\frac{3}{2}(2) - 3$

$y = -3 - 3$

$y = -6$



| X | Y  |
|---|----|
| 0 | -3 |
| 2 | -6 |

73.  $4x - 6y = 12$

find x-int let  $y = 0$

$4x - 6(0) = 12$

$4x - 0 = 12$

$4x = 12$

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

$x = 3$

x-intercept  
 $(3, 0)$

find y-int let  $x = 0$

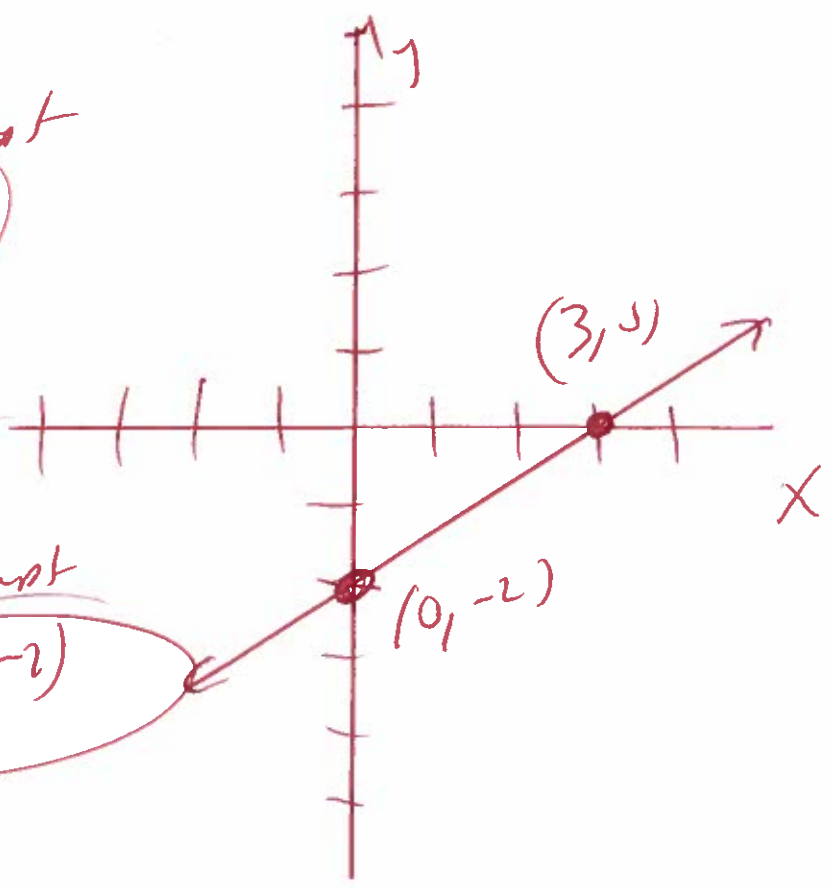
$4(0) - 6y = 12$

$0 - 6y = 12$

$-6y = 12$

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

y-intercept  
 $(0, -2)$   
 $y = -2$



74) find slope  $(9, -6)$   $(8, -3)$   
 $x_1$   $y_1$   $x_2$   $y_2$

$$m = \frac{y_1 - y_2}{x_1 - x_2}$$

$$m = \frac{(-6) - (-3)}{(9) - (8)}$$

$$m = \frac{-6 + 3}{9 - 8}$$

$$m = \frac{-3}{1}$$

$$m = -3$$

75) find slope  $(-3, -8)$  at  $(4, -2)$   
 $x_1$   $y_1$   $x_2$   $y_2$

$$m = \frac{y_1 - y_2}{x_1 - x_2}$$

$$m = \frac{(-8) - (-2)}{(-3) - (4)}$$

$$m = \frac{-8 + 2}{-3 - 4}$$

$$m = \frac{-6}{-7}$$

$$m = \frac{6}{7}$$

76  $y = -5x + 5$

find slope

$y = mx + b$  formula

$m = \text{slope}$

$b = y\text{-intercept}$

$m = -5 = \text{slope}$

77  $8x + y = 8$

find slope

$y = mx + b$  formula

$m = \text{slope}$

$b = y\text{-intercept}$

$8x + y - 8x = 8 - 8x$

$y = 8 - 8x$

$y = -8x + 8$

$m = -8 = \text{slope}$

78  $6x - 7y = 42$  find slope

$6x - 7y - 6x = 42 - 6x$

$-7y = 42 - 6x$

$\frac{-7y}{-7} = \frac{42}{-7} - \frac{6x}{-7}$

$y = -6 + \frac{6}{7}x$

$y = \frac{6}{7}x - 6$

$\text{slope} = m = \frac{6}{7}$

formula  
 $y = mx + b$

$m = \text{slope}$

$b = y\text{-intercept}$

79) find equation of line  $m=7$ ,  $(-6, 8)$   
 $x_1$   $y_1$  28

$$y - y_1 = m(x - x_1)$$

$$y - (8) = 7(x - (-6))$$

$$y - 8 = 7(x + 6)$$

$$y - 8 = 7x + 42$$

$$y - \cancel{8} + \cancel{8} = 7x + 42 + 8$$

$$y = 7x + 50$$

80.  $x^2 - 3x + 2$  eval if  $x = -3$

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

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

$$9 + 9 + 2$$

$$18 + 2 =$$

$$20 =$$

81

$$\begin{aligned} 3x - y &= 9 \\ x + 2y &= 10 \end{aligned}$$

Is  $(4, 3)$  a solution  
 $x, y$

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

$$12 - 3 = 9$$

$$9 = 9 \quad \checkmark \quad \text{Good}$$

$$(4) + 2(3) = 10$$

$$4 + 6 = 10$$

$$10 = 10 \quad \checkmark \quad \text{Good}$$

Subst

YES

$(4, 3)$

is a solution

✓✓

Is  $(5, 6)$  a solution  
 $x, y$

$$3(5) - (6) = 9$$

$$15 - 6 = 9$$

$$9 = 9 \quad \checkmark \quad \text{Good}$$

$$(5) + 2(6) = 10$$

$$5 + 12 = 10$$

$$17 \neq 10 \quad \text{NU}$$

BAD

NO

$(5, 6)$

is not a  
solution

✗✗

82

$$x + y = 15$$

$$x = 4y$$

$$(4y) + y = 15$$

$$4y + y = 15$$

$$4y + 1y = 15$$

$$5y = 15$$

$$\frac{5y}{5} = \frac{15}{5}$$

$$y = 3$$

$$x + y = 15$$

$$x + (3) = 15$$

$$x + 3 = 15$$

$$x + 3 - 3 = 15 - 3$$

$$x = 12$$

$$(x, y) = (12, 3)$$

30

83

$$y = 4x + 1$$

$$2y - 3x = 12$$

Subst

$$2(4x + 1) - 3x = 12$$

$$8x + 2 - 3x = 12$$

$$5x + 2 = 12$$

$$5x + \cancel{2} - \cancel{2} = 12 - 2$$

$$5x = 10$$

$$\frac{5x}{5} = \frac{10}{5}$$

$$x = 2$$



$$y = 4x + 1$$

Subst

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

$$y = 8 + 1$$

$$y = 9$$



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

84

$$6x - y = 22$$

$$3x + y = 14$$

---

$$9x + 0 = 36$$

$$9x = 36$$

$$\frac{9x}{9} = \frac{36}{9}$$

$$x = 4$$

Subst

$$6(4) - y = 22$$

$$24 - y = 22$$

$$\cancel{24} - y - \cancel{24} = 22 - 24$$

$$-y = -2$$

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

$$y = 2$$

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

30



85

$$x^2 \cdot x^5 =$$

$$x^{2+5} =$$

$$x^7 =$$

33

86

$$(-3p^3q^4)(6p^1q^2) =$$

$$(-3p^3q^4)(6p^1q^2) =$$

$$-18p^{3+1}q^{4+2} =$$

$$-18p^4q^6 =$$

87

$$(3z^{12})(-6z^6)(z^2) =$$

$$(3z^{12})(-6z^6)(1z^2) =$$

$$-18z^{12+6+2} =$$

$$-18z^{20} =$$

88

$$(z^5)^7 =$$

$$z^{(5)(7)} =$$

$$z^{35} =$$

89

$$(3c^5)^3 =$$

$$(3^1 c^5)^3 =$$

$$3^{1(3)} c^{5(3)} =$$

$$3^3 c^{15} =$$

$$3 \cdot 3 \cdot 3 c^{15} =$$

$$27 c^{15} =$$

34

90

$$(-5a^3b^4c)^2 =$$

$$(-5)^1 a^3 b^4 c^1 =$$

$$(-5)^{1(2)} a^{3(2)} b^{4(2)} c^{1(2)} =$$

$$(-5)^2 a^6 b^8 c^2 =$$

$$(-5)(-5) a^6 b^8 c^2 =$$

$$25 a^6 b^8 c^2 =$$

(91)  $\left(\frac{-9x^5z^5}{y^4}\right)^3 =$

$\left(\frac{(-9)^1 x^5 z^5}{y^4}\right)^3 =$

$\frac{(-9)^{1(3)} x^{5(3)} z^{5(3)}}{y^{4(3)}} =$

$\frac{(-9)^3 x^{15} z^{15}}{y^{12}} =$

$\frac{(-9)(-9)(-9) x^{15} z^{15}}{y^{12}} =$

$\frac{-729 x^{15} z^{15}}{y^{12}} =$

92.  $b^4 b^5 b^6 =$   
 $b^{4+5+6} =$   
 $b^{15} =$

93.  $\frac{5x^5 y^2 z}{x^3 y z} =$   
 $\frac{5x^5 y^2 z^1}{x^3 y^1 z^1} =$   
 $\frac{5x^{5-3} y^{2-1}}{1} =$   
 $5x^2 y^1 =$

$5x^2 y =$

94.  $P(x) = x^2 + x + 5 \quad P(6)$   
 $P(6) = (6)^2 + (6) + 5$   
 $P(6) = (6)(6) + (6) + 5$   
 $P(6) = 36 + 6 + 5$   
 ~~$P(6) = 42 + 5$~~   
 $P(6) = 47$

$$(95) \quad \varphi(x) = 4x^2 - 1 \quad \varphi(-8)$$

$$\varphi(-8) = 4(-8)^2 - 1$$

$$\varphi(-8) = 4(-8)(-8) - 1$$

$$\varphi(-8) = 4(64) - 1$$

$$\varphi(-8) = 256 - 1$$

$$\varphi(-8) = 255$$

$$(96) \quad -5a^2 - 6ab + 5b^2 - 8a^2 - 9ab + 6b^2 =$$

$$-13a^2 - 15ab + 11b^2 =$$

$$(97) \quad (4y^2 + 6y - 2) - (-3y + 8) =$$

$$4y^2 + 6y - 2 + 3y - 8 =$$

$$4y^2 + 9y - 10 =$$

$$(98) \quad (-8y^2 - 4y) + (9y^2 + y - 2) =$$

$$-8y^2 - 4y + 9y^2 + y - 2 =$$

$$+1y^2 - 3y - 2 =$$

$$+y^2 - 3y - 2 =$$

(32)

99

$$(9x^2 + 8x) + (-7x^2 - 6x - 9) =$$

$$9x^2 + 8x - 7x^2 - 6x - 9 =$$

$$2x^2 + 2x - 9 =$$

38

100

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

$$6x^3 - 15x^2 + 15x =$$

101

$$(6y - 1)^2 =$$

$$(6y - 1)(6y - 1) =$$

$$36y^2 - 6y - 6y + 1 =$$

$$36y^2 - 12y + 1 =$$

102

$$(x + 6)(x^3 - 3x + 4) =$$

$$x^4 - 3x^2 + 4x + 6x^3 - 18x + 24 =$$

$$x^4 + 6x^3 - 3x^2 - 14x + 24 =$$

103

$$-4x(x^2 + 6x - 7) =$$

$$-4x^3 - 24x^2 + 28x =$$

39

104

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

$$a^3 - 8a^2 + 8a + 3a^2 - 24a + 24 =$$

$$a^3 - 5a^2 - 16a + 24 =$$

105

$$(9x+5)(6x^2+7x+3) =$$

$$54x^3 + 63x^2 + 27x + 30x^2 + 35x + 15 =$$

$$54x^3 + 93x^2 + 62x + 15 =$$

106

find Area

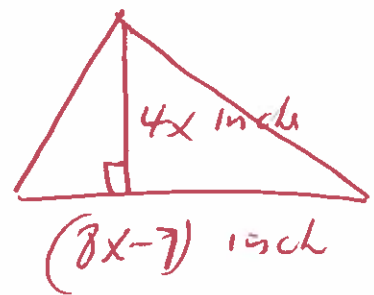
$$A = \frac{1}{2} BH$$

$$A = \frac{1}{2} (8x-7)(4x)$$

$$A = \frac{1}{2} (32x^2 - 28x)$$

$$A = \frac{1}{2} (32x^2) - \frac{1}{2} (28x)$$

$$A = 16x^2 - 14x$$



$$(107) \quad (3y-9)(y+4) =$$

$$3y^2 + 12y - 9y - 36 =$$

$$3y^2 + 3y - 36 =$$

40.

$$(108) \quad 2(y-5)(4y-1) =$$

$$2(4y^2 - 1y - 20y + 5) =$$

$$2(4y^2 - 21y + 5) =$$

$$8y^2 - 42y + 10 =$$

$$(109) \quad (a-9)(a+9) =$$

$$a^2 + 9a - 9a - 81 =$$

$$a^2 - 81 =$$

$$(110)$$

$$(5a-4c)^2 =$$

$$(5a-4c)(5a-4c) =$$

$$25a^2 - 20ac - 20ac + 16c^2 =$$

$$25a^2 - 40ac + 16c^2 =$$



$$(111) \quad 2^{-3} =$$

$$\frac{1}{2^3} = \text{Kl. W. r. d.}$$

$$\frac{1}{2 \cdot 2 \cdot 2} =$$

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

$$(112) \quad \left(\frac{1}{4}\right)^{-4}$$

$$\left(\frac{1}{4}\right)^{-4}$$

$$\frac{1^{(-4)}}{4^{1(-4)}} =$$

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

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

$$\frac{4 \cdot 4 \cdot 4 \cdot 4}{1 \cdot 1 \cdot 1 \cdot 1} = \frac{256}{1} =$$

256

(41)

113

$$\frac{p^{-2}}{q^{-9}} =$$

$$\frac{q^9}{p^2} = \text{rewrite}$$

42.

114

$$\frac{t^{-1}}{t^{-6}} =$$

$$\frac{t^6}{t^1} =$$

$$t^{6-1} =$$

$$t^5 =$$

115

write in scientific notation

$$41000 =$$

$$4.1000 \times 10^4 =$$

116) Write in scientific notation

43

$$0.00000175 =$$

$$1.75 \times 10^{-6} =$$

117) find GCF Prime 2, 3, 5, 7, ...

$$16, 56$$

$$2 \overline{) 16}$$

$$2 \overline{) 8}$$

$$2 \overline{) 4}$$

$$2 \overline{) 2}$$

1

$$2 \overline{) 56}$$

$$2 \overline{) 28}$$

$$2 \overline{) 14}$$

$$7 \overline{) 7}$$

1

$$\text{GCF} = 2 \cdot 2 \cdot 2 = 8$$

$$16 = 2 \cdot 2 \cdot 2 \cdot 2$$

$$56 = 2 \cdot 2 \cdot 2 \cdot 7$$

$$\text{GCF} = 2 \cdot 2 \cdot 2$$

118

factor

$$5x + 25 =$$

$$5(x + 5) =$$

119

factor

$$-48x^4y^4 - 30x^5y^2 =$$

$$6x^4y^2(-8y^2 - 5x)$$

120  $x^2 + 6x + 8 =$  factor

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

1. 8  
2. 4 possible

44

121 factor

$x^2 - 11x + 18 =$

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

1. 18  
2. 9  
3. 6 possible

122 factor

$x^2 - 2x - 48 =$

$(x+6)(x-8) =$

48. 1  
24. 2  
12. 4  
6. 8  
16. 3 possible

123 factor

$100x^2 - 169y^2$

$(10x)^2 - (13y)^2$

$(10x+13y)(10x-13y) =$

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

(124)

Solve

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

$$\text{or } x-2=0 \text{ or } x+5=0$$

$$x-\cancel{x}+2=0+2 \text{ OR } x+\cancel{x}-5=0-5$$

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

(125)

Solve

$$x(x+9)=0$$

$$\text{or } x=0 \text{ OR } x+9=0$$

$$x+\cancel{x}-9=0-9$$

$$x=-9$$

(126)

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

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

$$\frac{8x}{8} = \frac{0}{8}$$

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

$$x=0$$

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

(127)

Solve

(40)

(127)  $(4x+7)(5x-7)=0$

$4x+7=0$  OR  $5x-7=0$

$4x+7-7=0-7$  OR  $5x-7+7=0+7$

$4x=-7$  OR  $5x=7$

$\frac{4x}{4} = \frac{-7}{4}$  OR  $\frac{5x}{5} = \frac{7}{5}$

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

OR  $x = \frac{7}{5}$

(128) Solve

$x^2 - 11x + 28 = 0$

2 p. 1  
1 x 1 possible  
4, 7

$(x-4)(x-7)=0$

$x-4=0$  OR  $x-7=0$

$x-4+4=0+4$  OR  $x-7+7=0+7$

$x=4$

OR  $x=7$

(129)

Solve

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

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

8.1  
2.4

(12)

or  $x-2=0$  or  $x+4=0$

$$x-2+2=0+2 \quad \text{or} \quad x+4-4=0-4$$

$x=2$  or  $x=-4$

(130)

Solve

$$x^2 - 2x = 0$$

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

or  $x=0$  or  $x-2=0$

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

$x=2$

(131)

Solve

$$x^2 - 3x = 18$$

$$x^2 - 3x - 18 = 0 \quad \text{K.W.L}$$

$$(x+3)(x-6) = 0$$

18.1  
9.2  
6.3  
Possible

or  $x+3=0$  or  $x-6=0$

$$x+3-3=0-3 \quad \text{or} \quad x-6+6=0+6$$

$x=-3$  or  $x=6$



$$(132) \frac{t^2 + 15t + 54}{t^2 + 4t - 5} \cdot \frac{t^2 + 3t - 4}{t^2 + 12t + 36}$$

$$\frac{(t+6)(t+9)}{(t-1)(t+5)} \cdot \frac{(t-1)(t+4)}{(t+6)(t+6)} =$$

$$\frac{(t+9)(t+4)}{(t+5)(t+6)} =$$

36.1  
18.2  
12.3  
4.9  
6.6

(48)

$$(133) \frac{3y^4}{2y^5} \div \frac{15y^2}{6y^4} =$$

$$\frac{3y^4}{2y^5} \cdot \frac{6y^4}{15y^2} =$$

$$\frac{(3)(6)y^{4+4}}{(2)(15)y^{5+2}} =$$

$$\frac{(3)(2)(3)y^8}{(2)(3)(5)y^7} =$$

$$\frac{3y^{8-7}}{5} =$$

$$\frac{3y^1}{5} =$$

$$\frac{3y}{5} =$$



134

$$\frac{3m}{4n} + \frac{9m}{4n}$$

$$\frac{(3m) + (9m)}{4n} =$$

$$\frac{3m + 9m}{4n} =$$

$$\frac{12m}{4n} =$$

$$\frac{\cancel{2}(\cancel{2})(3)m}{\cancel{2}(\cancel{2})n} =$$

$$\frac{3m}{n} =$$

135

$$-\sqrt{\frac{1}{64}}$$

$$-\frac{\sqrt{1}}{\sqrt{64}} =$$

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

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

136

$$\sqrt{144x^6} =$$

$$\sqrt{12^2 x^6} =$$

$$12^{\frac{2}{2}} x^{\frac{6}{2}} = \text{Divide Powers}$$

$$12^1 x^3 = 12x^3$$

137.  $\sqrt[3]{1} =$

$\sqrt[3]{(1)^3} =$  rewrite

$(1)^{3/3} =$

$(1)^1 =$

$1 =$

138.  $\sqrt[3]{-\frac{1}{8}} =$

$\sqrt[3]{\frac{(-1)^3}{(2)^3}} =$  rewrite

$\frac{\sqrt[3]{(-1)^3}}{\sqrt[3]{(2)^3}} =$

$\frac{(-1)^{3/3}}{(2)^{3/3}} =$

$\frac{(-1)^1}{(2)^1} =$

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

139

$$\sqrt{\frac{49}{16}} =$$

$$\frac{\sqrt{49}}{\sqrt{16}} =$$

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

51

140

$$\left(\frac{16}{81}\right)^{\frac{1}{4}} =$$

$$\left(\frac{2^4}{3^4}\right)^{\frac{1}{4}} = \text{rewrite}$$

$$\frac{2^{4(\frac{1}{4})}}{3^{4(\frac{1}{4})}} =$$

$$\frac{2^{\frac{4}{4}}}{3^{\frac{4}{4}}} =$$

$$\frac{2^1}{3^1} =$$

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

141.

$1024^{4/5} =$  Primes 2, 3, 5, 7...

52

$(2^{10})^{4/5} = \text{rewrite}$

$2^{10 \cdot (4/5)} =$

$2^{40/5} =$

$2^8 =$

$2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 =$

$256 =$

$$\begin{array}{r}
 2 \overline{)1024} \\
 \underline{2048} \\
 2 \overline{)512} \\
 \underline{4096} \\
 2 \overline{)256} \\
 \underline{2048} \\
 2 \overline{)128} \\
 \underline{256} \\
 2 \overline{)64} \\
 \underline{128} \\
 2 \overline{)32} \\
 \underline{64} \\
 2 \overline{)16} \\
 \underline{32} \\
 2 \overline{)8} \\
 \underline{16} \\
 2 \overline{)4} \\
 \underline{8} \\
 2 \overline{)2} \\
 \underline{4} \\
 1
 \end{array}$$

142.

$\sqrt{40} =$  Primes 2, 3, 5, 7, ...

$\sqrt{4 \cdot 10} =$

$\sqrt{4} \cdot \sqrt{10} =$

$2\sqrt{10} =$

$$\begin{array}{r}
 2 \overline{)40} \\
 \underline{20} \\
 20 \\
 2 \overline{)10} \\
 \underline{5} \\
 5 \\
 1
 \end{array}$$

(143)  $\sqrt[3]{875} =$  Primes 2, 3, 5, 7, ... (53)

$$\sqrt[3]{5^3 \cdot 7} =$$

$5^{3/3} \sqrt[3]{7} =$  divide power

$$5^1 \sqrt[3]{7} =$$

$$5 \sqrt[3]{7}$$

$$\begin{array}{r} 5 \overline{) 875} \\ \underline{5} \phantom{00} \\ 375 \\ \underline{350} \\ 25 \\ \underline{25} \\ 0 \end{array}$$

(144)  $5 \sqrt{125}$  Primes 2, 3, 5, 7

$$5 \sqrt{5^2 \cdot 5} =$$

(5)  $5^{2/2} \sqrt{5} =$  divide powers

$$(5)(5^1) \sqrt{5} =$$

$$25 \sqrt{5} =$$

$$\begin{array}{r} 5 \overline{) 125} \\ \underline{5} \phantom{00} \\ 75 \\ \underline{75} \\ 0 \end{array}$$

(145)  $\sqrt{x-14} = 4$

$$(\sqrt{x-14})^2 = (4)^2$$

$$x-14 = 16$$

$$x-14+14 = 16+14$$

$$x = 30$$

(146)  $9\sqrt{-63}$  Prime

2, 3, 5, 7, ...

$$9\sqrt{-9 \cdot 7} =$$

$$9\sqrt{-9} \sqrt{7} =$$

$$9(3i) \sqrt{7} =$$

$$27i \sqrt{7} =$$

$$\begin{array}{r} 3 \overline{) 63} \\ \underline{3} \phantom{0} \\ 30 \\ \underline{30} \\ 30 \\ \underline{30} \\ 0 \end{array}$$

formulas

$$\sqrt{-1} = i$$

example

$$\sqrt{-4} = 2i$$

$$\sqrt{-9} = 3i$$

$$\sqrt{-16} = 4i$$

$$\sqrt{-25} = 5i$$

...

(147)  $(x+6)^2 = 25$

$$\sqrt{(x+6)^2} = \pm \sqrt{25}$$

$$x+6 = \pm 5$$

$$x+6 = -5 \quad \text{OR} \quad x+6 = 5$$

$$x+6-6 = -5-6 \quad \text{OR} \quad x+6-6 = 5-6$$

$$x = -11 \quad \text{OR} \quad x = -1$$