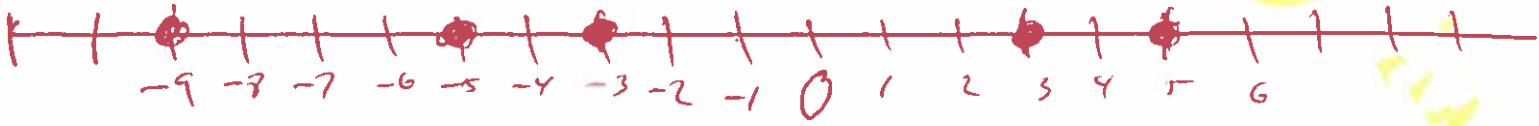


① 3, -3, 5, -5, -9

graph
Math 104/1013/1666 131510
07-31-18 done
done



② $2x - y$, $x = 6$, $y = -3$

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

$$12 + 3 =$$

$$15 =$$

③ $6 + 4 \cdot 5 - 13 =$

$$6 + 20 - 13 =$$

$$26 - 13 =$$

$$13 =$$

④ $5 \cdot 7 - 2 \cdot 4 + (-23) =$

$$35 - 2 \cdot 4 + (-23) =$$

$$35 - 8 + (-23) =$$

$$35 - 8 - 23 =$$

$$27 - 23 =$$

$$4 =$$

$$\begin{aligned} 5 \quad & 7(-15) \div [3(-7) - 5(-4)] = \\ & 7(-15) \div [-21 + 20] = \text{PEMDAS} \\ & 7(-15) \div [-1] = \\ & -105 \div [-1] = \\ & 105 = \end{aligned}$$

$$\begin{aligned} 6 \quad & x^2 - y \quad x = -2, y = 5 \\ & (-2)^2 - (5) = \text{PEMDAS} \\ & (-2)(-2) - (5) = \\ & 4 - 5 = \\ & -1 = \end{aligned}$$

$$\begin{aligned} 7 \quad & \text{Average} \\ & \frac{(-15) + (-11) + (-1) + (-6) + (8) + (14) + (-3)}{7} = \\ & \frac{-14}{7} = \\ & -2 = \end{aligned}$$

$$\textcircled{8} \quad d - 7 = -19$$

$$d - 7 + 7 = -19 + 7$$

$$d = -12$$

ck

$$d - 7 = -19$$

$$f(12) - 7 = -19$$

$$-12 - 7 = -19$$

$$-19 = -19 \quad \underline{\text{Good}}$$

$$\textcircled{9} \quad \frac{n}{9} = -8$$

$$\frac{1n}{9} = \frac{-8}{1}$$

$$\frac{9}{1} \left(\frac{1n}{9} \right) = \frac{9}{1} \left(\frac{-8}{1} \right) \text{ mult}$$

$$n = \frac{-72}{1}$$

$$n = -72$$

10

$$3x - 10x =$$

$$-7x =$$

11

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

PEMDAS

$$-12r - 12 =$$

12

$$4y - 2(y - 1) + 6 =$$

$$4y - 2y + 2 + 6 =$$

PEMDAS

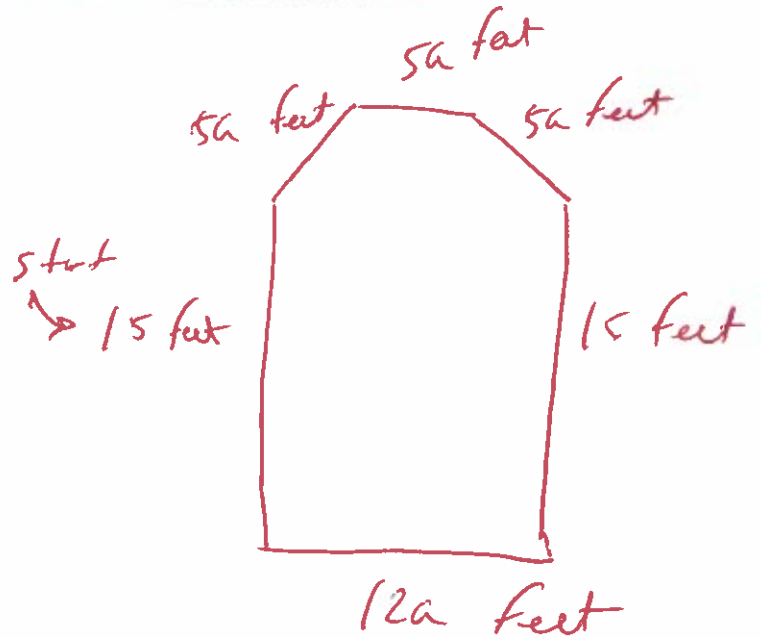
$$2y + 8 =$$

13

find perimeter

$$P = 15 + 5a + 5a + 5a + 15 + 12a$$

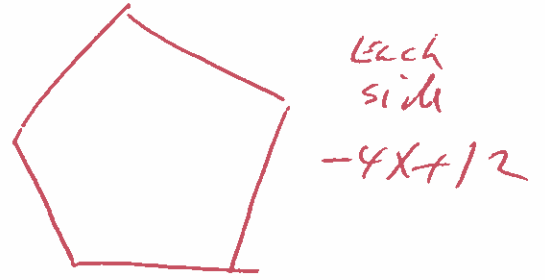
$$P = 27a + 30 \text{ feet}$$



14 find perimeter

$$P = 5(-4x + 12)$$

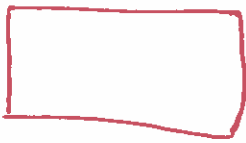
$$P = -20x + 60 \text{ inches}$$



15 find area

$$A = LW$$

39
kilometer



$$A = (x-2)(39)$$

$$A = 39x - 78 \text{ Square kilometers}$$

16

$$A = LW,$$

$$L = 44 \text{ feet}, W = 32 \text{ feet}$$

$$A = (44)(32)$$

$$A = 1408 \text{ Square feet}$$

17

$$P = 2L + 2W,$$

$$L = 27 \text{ feet}, W = 23 \text{ feet}$$

$$P = 2(27) + 2(23)$$

$$P = 54 + 46$$

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

18

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

$$4x - 8 = 5x$$

$$4x - 8 + 8 = 5x + 8$$

$$4x = 5x + 8$$

$$4x - 5x = 5x + 8 - 5x$$

$$-1x = 8$$

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

$$x = -8$$

PEMDAS

19.

$$-7(x+6) - 44 = 2 - 53$$

$$-7x - 42 - 44 = -51$$

$$-7x - 86 = -51$$

$$-7x - 86 + 86 = -51 + 86$$

$$-7x = 35$$

$$\frac{-7x}{-7} = \frac{35}{-7}$$

$$x = -5$$

PEMDAS

20

$$\frac{x}{-3} = 2^2 - |-2| - (-9)$$

$$\frac{x}{-3} = (2)(2) - (2) - (-9)$$

$$\frac{x}{-3} = 4 - 2 + 9$$

$$\frac{x}{-3} = 2 + 9$$

$$\frac{x}{-3} = 11$$

$$\frac{x}{-3} = \frac{11}{1}$$

$$\frac{-3}{x} \left(\frac{x}{-3} \right) = \frac{-3}{1} \left(\frac{11}{1} \right)$$

$$x = \frac{-33}{1}$$

$$x = -33$$

pendas

21.

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

$$8x - \cancel{8} + 8 = 9x + 7 + 8$$

$$8x = 9x + 15$$

$$8x - 9x = 9x + 15 - 9x$$

$$-1x = 15$$

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

$$x = -15$$

22.

$$-14x - 20 = -12x + 110$$

$$-14x - \cancel{20} + 20 = -12x + 110 + 20$$

$$-14x = -12x + 130$$

$$-14x + 12x = -\cancel{12x} + 130 + \cancel{12x}$$

$$-2x = 130$$

$$\frac{-2x}{-2} = \frac{130}{-2}$$

$$x = -65$$

23

$$5(y-3) = 2y - 15$$

$$5y - 15 = 2y - 15$$

$$5y - \cancel{15} + \cancel{15} = 2y - \cancel{15} + \cancel{15}$$

PEMDAS

$$5y = 2y$$

$$5y - 2y = 2y - 2y$$

$$3y = 0$$

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

$$y = 0$$

24

$$3t - 7 = 4(t+3)$$

PEMDAS

$$3t - 7 = 4t + 12$$

$$3t - \cancel{7} + \cancel{7} = 4t + 12 + 7$$

$$3t = 4t + 19$$

$$3t - 4t = 4t + 19 - 4t$$

$$-1t = 19$$

$$\frac{-1t}{-1} = \frac{19}{-1}$$

$$t = -19$$

25

$$3(2c-1)-1 = 4c+8$$

$$6c - 3 - 1 = 4c + 8$$

$$6c - 4 = 4c + 8$$

$$6c - \cancel{4} + \cancel{4} = 4c + 8 + 4$$

$$6c = 4c + 12$$

$$6c - 4c = \cancel{4c} + 12 - \cancel{4c}$$

$$2c = 12$$

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

$$c = 6$$

pendas

26

$$5n + 10 = 25$$

$$5n + \cancel{10} - \cancel{10} = 25 - 10$$

$$5n = 15$$

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

$$n = 3$$

27.

$$24 + 7t = 8(t + 3)$$

$$24 + 7t = 8t + 24$$

$$\cancel{24} + 7t - \cancel{24} = 8t + \cancel{24} - \cancel{24}$$

$$7t = 8t$$

$$7t - 8t = 8t - 8t$$

$$-1t = 0$$

$$\frac{-1t}{-1} = \frac{0}{-1}$$

$$t = 0$$

PEMDAS

28.

$$-\frac{3}{2} \cdot \frac{5}{9} =$$

Prime 2, 3, 5, 7.

$$\frac{-1(3)}{(2)} \cdot \frac{5}{(3)(3)} =$$

$$\frac{-1(\cancel{3})}{(2)} \cdot \frac{(5)}{(\cancel{3})(3)} =$$

$$\frac{-5}{6} =$$

$$\begin{array}{l} 3(9) \\ 3(3) \\ 1 \end{array}$$

29

$$\frac{7}{10} \div \frac{19}{20} =$$

Prims 2, 3, 5, 7

$$\frac{7}{10} \cdot \frac{20}{19} =$$

$$\frac{\cancel{2} \cancel{1} 0}{\cancel{5} \cancel{5} 1}$$

$$\frac{\cancel{2} \cancel{2} 0}{\cancel{2} \cancel{1} 0 \cancel{5} \cancel{5} 1}$$

$$\frac{\cancel{7}}{\cancel{2} \cancel{5}} \cdot \frac{\cancel{2} \cancel{2} \cancel{5}}{\cancel{1} \cancel{9}} =$$

$$\frac{\cancel{7}}{\cancel{2} \cancel{5}} \cdot \frac{\cancel{2} \cancel{2} \cancel{5}}{\cancel{1} \cancel{9}} =$$

$$\frac{14}{19} =$$

30

$$\frac{8x^2}{21y} \div \frac{12x}{49y} =$$

Prims 2, 3, 5, 7

$$\frac{\cancel{2} \cancel{8}}{\cancel{2} \cancel{4} \cancel{2} 1}$$

$$\frac{\cancel{2} \cancel{1} \cancel{2}}{\cancel{2} \cancel{6} \cancel{3} 1}$$

$$\frac{\cancel{3} \cancel{2} \cancel{1}}{\cancel{7} \cancel{7} 1}$$

$$\frac{\cancel{7} \cancel{4} \cancel{9}}{\cancel{7} \cancel{7} 1}$$

$$\frac{8x^2}{21y} \cdot \frac{49y}{12x} =$$

$$\frac{\cancel{2} \cancel{2} \cancel{2} x x}{\cancel{3} \cancel{7} y} \cdot \frac{\cancel{7} \cancel{7} y}{\cancel{2} \cancel{2} \cancel{3} x} =$$

$$\frac{\cancel{2} \cancel{2} \cancel{2} x x}{\cancel{3} \cancel{7} y} \cdot \frac{\cancel{7} \cancel{7} y}{\cancel{2} \cancel{2} \cancel{3} x} =$$

$$\frac{14x}{9} =$$

31.

$$\frac{1}{20} + \frac{11}{20} =$$

$$\frac{1+11}{20} =$$

$$\frac{12}{20} =$$

$$\frac{(2)(2)(3)}{(2)(2)(5)} =$$

$$\frac{\cancel{2}(\cancel{2})(3)}{\cancel{2}(\cancel{2})(5)} =$$

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

Primes 2, 3, 5, 7.

$$\begin{array}{r} \cancel{2} \cancel{12} \\ \cancel{2} \cancel{6} \\ \cancel{3} \cancel{3} \\ 1 \end{array}$$

$$\begin{array}{r} \cancel{2} \cancel{20} \\ \cancel{2} \cancel{10} \\ \cancel{5} \cancel{5} \\ 1 \end{array}$$

32.

$$\frac{1}{2} + \frac{1}{8} =$$

$$\frac{1}{2} \left(\frac{4}{4} \right) + \frac{1}{8} =$$

$$\frac{4}{8} + \frac{1}{8} =$$

$$\frac{4+1}{8} =$$

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

$$LCD = 8$$

$$\begin{array}{r} \cancel{2} \cancel{12} \\ \cancel{2} \cancel{6} \\ \cancel{2} \cancel{2} \\ 1 \end{array}$$

$$8 = \cancel{2} \cdot \cancel{2} \cdot \cancel{2}$$

$$\frac{2 = 2}{LCD = 2 \cdot 2 \cdot 2 = 8}$$

33

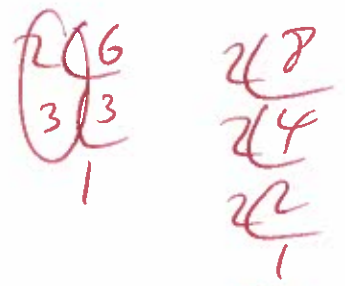
$\frac{1}{6} - \frac{5}{8}$ Prime 2, 3, 5, 7.

$\frac{1}{6} \left(\frac{4}{4}\right) - \frac{5}{8} \left(\frac{3}{3}\right)$

$\frac{4}{24} - \frac{15}{24} =$

$\frac{4-15}{24} =$

$\frac{-11}{24} =$



$6 = 2 \cdot 3$

$8 = 2 \cdot 2 \cdot 2$

$LCD = 2 \cdot 2 \cdot 2 \cdot 3$

34

$\frac{\frac{3}{4}}{\frac{3}{5}} =$

$\frac{3}{4} \cdot \frac{5}{3} =$

~~$\frac{3}{4} \cdot \frac{5}{3} =$~~

$\frac{5}{4} =$

35

$$-18 = \frac{3}{7}x$$

$$\frac{7}{3}\left(\frac{-18}{1}\right) = \frac{7}{3}\left(\frac{3x}{7}\right)$$

$$\frac{7}{3}\left(\frac{-18}{1}\right) = x$$

$$\frac{\cancel{7}}{\cancel{3}}\left(\frac{(-1)(2)(3)\cancel{3}}{1}\right) = x$$

$$(7)(-1)(2)(3) = x$$

$$-42 = x$$

Prime 2, 3, 5, 7...

$$\begin{array}{r} 2 \overline{) 18} \\ \underline{36} \\ 3 \overline{) 9} \\ \underline{30} \\ 3 \overline{) 3} \\ \underline{3} \\ 0 \end{array}$$

36

$$\frac{m}{5} = \frac{m}{7} + 7$$

$$\frac{m}{5} = \frac{m}{7} + \frac{7}{1}$$

$$\frac{m}{5}(35) = \frac{m}{7}(35) + \frac{7}{1}(35)$$

$$m(7) = m(5) + 7(35)$$

$$7m = 5m + 245$$

$$7m - 5m = 5m + 245 - 5m$$

$$2m = 245$$

$$\frac{2m}{2} = \frac{245}{2}$$

$$m = \frac{245}{2}$$

$$LCD = 35$$

$$\begin{array}{r} 3 \\ 35 \\ \times 7 \\ \hline 245 \end{array}$$

37

$$\frac{1}{3} - \frac{x}{8} = \frac{7}{24}$$

LCD = 24

$$\frac{1}{3}(24) - \frac{x}{8}(24) = \frac{7}{24}(24) \text{ mult}$$

$$1(8) - x(3) = 7(1)$$

$$8 - 3x = 7$$

$$\cancel{8} - 3x - \cancel{8} = 7 - \cancel{8}$$

$$-3x = -1$$

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

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

38

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

LCD = 2

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

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

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

$$x + 2 = 1$$

$$x + \cancel{2} - \cancel{2} = 1 - 2$$

$$x = -1$$

39.

$$\frac{a}{3} + 5 = \frac{a}{2} + 4$$

LCD = 6

$$\frac{a}{3} + \frac{5}{1} = \frac{a}{2} + \frac{4}{1}$$

$$\frac{a}{3}(6) + \frac{5}{1}(6) = \frac{a}{2}(6) + \frac{4}{1}(6)$$

$$a(2) + 5(6) = a(3) + 4(6)$$

$$2a + 30 = 3a + 24$$

$$2a + \cancel{30} - \cancel{30} = 3a + 24 - 30$$

$$2a = 3a - 6$$

$$2a - 3a = \cancel{3a} - 6 - \cancel{3a}$$

$$-1a = -6$$

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

$a = 6$

40.

$$-6.585 \times 1000 =$$

$-6585.$ = Move decimal right 3 times

41

$$\frac{86.365}{100} =$$

0.86365 = move decimal left
2 times

42

$$3.1x - 27 = 1.6x + 6$$

$$3.1x - \cancel{27} + \cancel{27} = 1.6x + 6 + 27$$

$$3.1x = 1.6x + 33$$

$$3.1x - 1.6x = 1.6x + 33 - 1.6x$$

$$1.5x = 33$$

$$\frac{1.5x}{1.5} = \frac{33}{1.5}$$

$$x = 22$$

43

$$\frac{9}{63} = \frac{21}{x}$$

$$9(x) = 63(21) \text{ cross mult}$$

$$9x = 1323$$

$$\frac{9x}{9} = \frac{1323}{9}$$

$$x = 147$$

44. Write the fraction as a percent

$$\frac{3}{5}$$

$$\frac{3}{5} = \frac{x}{100}$$

$3(100) = 5(x)$ Cross mult

$$300 = 5x$$

$$\frac{300}{5} = \frac{5x}{5}$$

$$60 = x$$

45. 44% written as a decimal

$$.44 =$$

44% written as a fraction (simplified)

$$\frac{44}{100} =$$

$$\frac{(2)(2)(11)}{(2)(2)(5)(5)} =$$

$$\frac{(2)(2)(11)}{(2)(2)(5)(5)} =$$

$$\frac{11}{25} =$$

Primes 2, 3, 5, 7, 11, 13

$$2 \overline{)44}$$

$$2 \overline{)22}$$

$$11 \overline{)11}$$

$$1$$

$$2 \overline{)100}$$

$$2 \overline{)50}$$

$$5 \overline{)25}$$

$$5 \overline{)5}$$

$$1$$

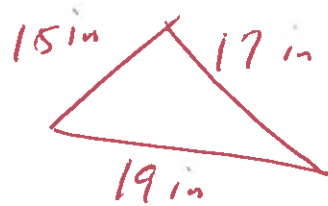
(46) $A = P - PD$, $P = 800$, $D = 35\% = .35$

$A = 800 - 800(.35)$

$A = 800 - 280$ ← discount

$A = 520$ ← Sale price

(47) Find Perimeter



$P = 15 + 17 + 19$

$P = 51$ inches

(48) Find area

$A = \pi r^2$, $r = 19.5$

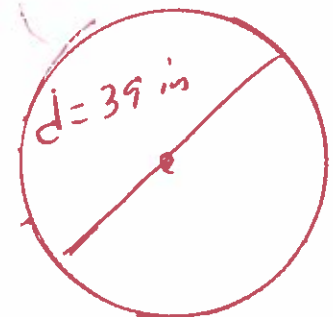
$A = \pi (19.5)^2$

$A = \pi (19.5)(19.5)$

$A = \pi (380.25)$

$A = 380.25\pi$ Exact Square inches

$r = \frac{1}{2}d = \frac{1}{2}(39) = \frac{39}{2} = 19.5$



$A = \pi r^2$, $\pi = 3.14$, $r = 19.5$

$A = 3.14 (19.5)^2$

$A = 3.14 (19.5)(19.5)$

$A = 3.14 (380.25)$

$A = 1193.975$ Approx Square inches

49

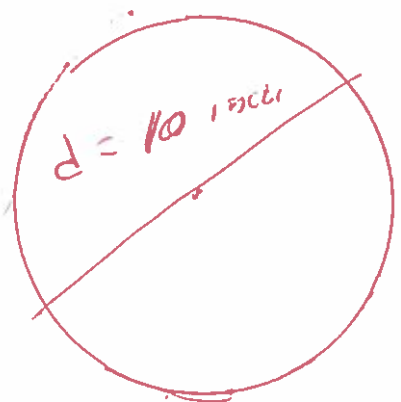
$A = \pi r^2$ $\pi = 3.14$

$A = \pi (r)^2$ $r = 5$

$A = \pi (5)(5)$

$A = \pi (2r)$

$A = 25\pi$ Exact
Square inch



$r = \frac{1}{2}d = \frac{1}{2}(10) = 5$

$A = \pi r^2$ $\pi = 3.14$ $r = 5$

$A = 3.14(5)^2$

$A = 3.14(5)(5)$

$A = 3.14(2r)$

$A = 78.5$ Approx
Square inch

50

$C = \frac{5}{9}(F - 32)$ Find C if $F = 158$

$C = \frac{5}{9}(158 - 32)$

$C = \frac{5}{9}(126)$

$C = \frac{5}{9}\left(\frac{126}{1}\right)$

$C = \frac{630}{9}$

$C = 70$

$$\begin{aligned}
 51. \quad & -2(x-7) - 7 = 7 \\
 & -2x + 14 - 7 = 7 \\
 & -2x + 7 = 7 \\
 & -2x + \cancel{7} - \cancel{7} = 7 - 7 \\
 & -2x = 0 \\
 & \frac{-2x}{-2} = \frac{0}{-2}
 \end{aligned}$$

$$x = 0$$

$$\begin{aligned}
 52. \quad & 3x + y = 10 \\
 & \cancel{3x} + y - \cancel{3x} = 10 - \cancel{3x} \\
 & y = 10 - 3x
 \end{aligned}$$

$$y =$$

OR

$$y = -3x + 10$$

rewrite

$$53. \quad W = X + Xyz \quad y =$$

$$W - X = X + Xyz - X$$

$$W - X = Xyz$$

$$\frac{W - X}{Xz} = \frac{Xyz}{Xz}$$

$$\frac{W - X}{Xz} = y$$

54

$$-5x \leq 15$$

$$\frac{-5x}{-5} \geq \frac{25}{5}$$

divide by a negative
turn alligator around

$$x \geq -5$$



$$[-5, \infty)$$

55

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

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

$$-4x + \cancel{2} \geq 10 - 2x - 2$$

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

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

$$-2x \geq 8$$

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

divide by a negative
turn alligator around

$$x \leq -4$$



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

56 $y = -3x + 8$

graph

x	y
0	8
1	5
2	2

$y = -3(0) + 8$

$y = 0 + 8$

$y = 8$

$y = -3(1) + 8$

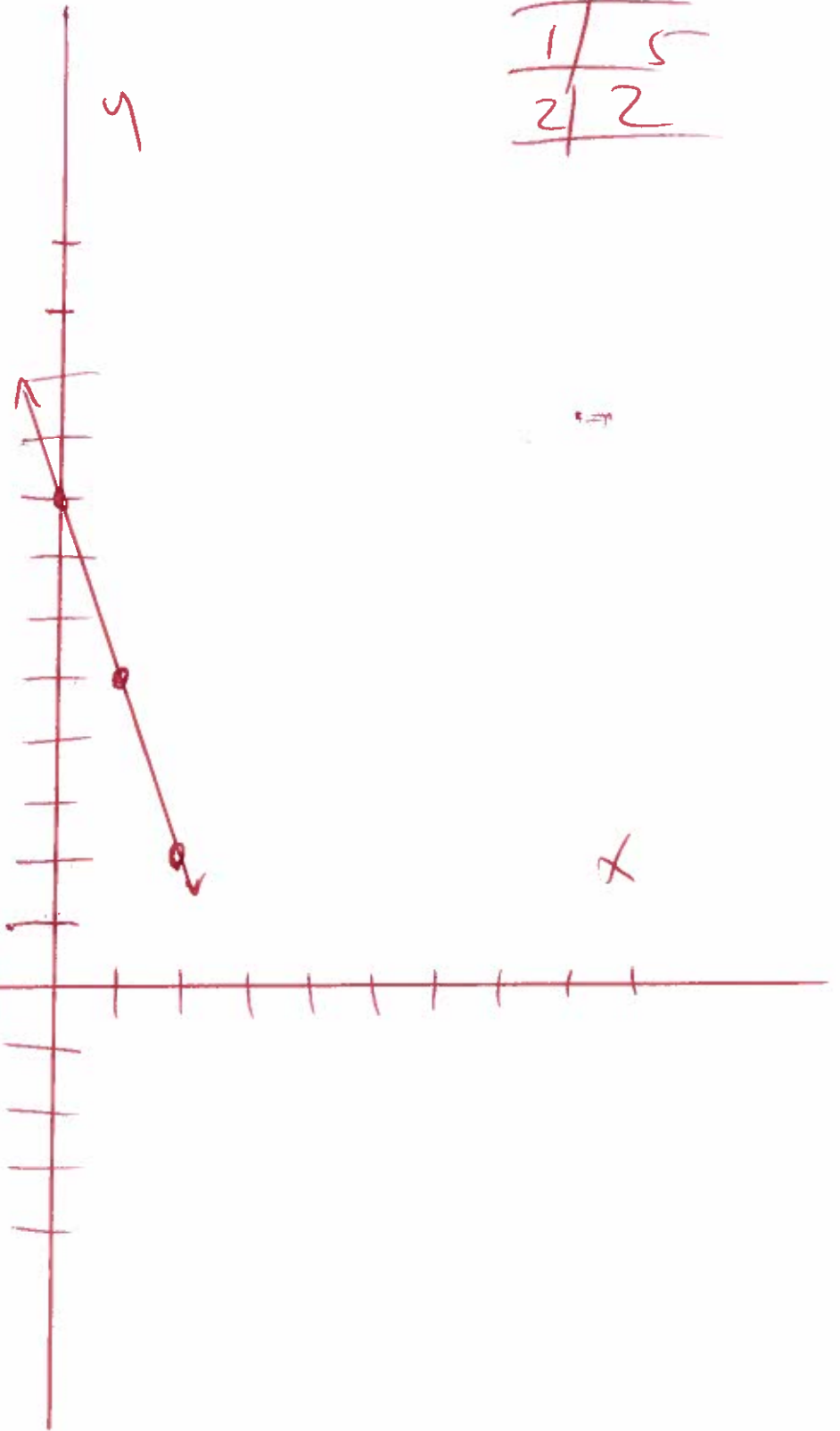
$y = -3 + 8$

$y = 5$

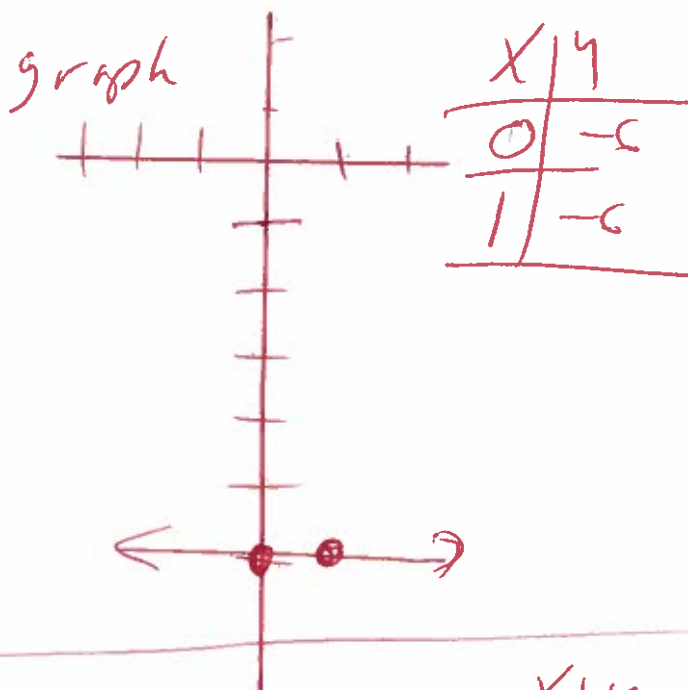
$y = -3(2) + 8$

$y = -6 + 8$

$y = 2$



57 $y = -6$



58 $y = \frac{1}{2}x - 1$

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

$$y = 0 - 1$$

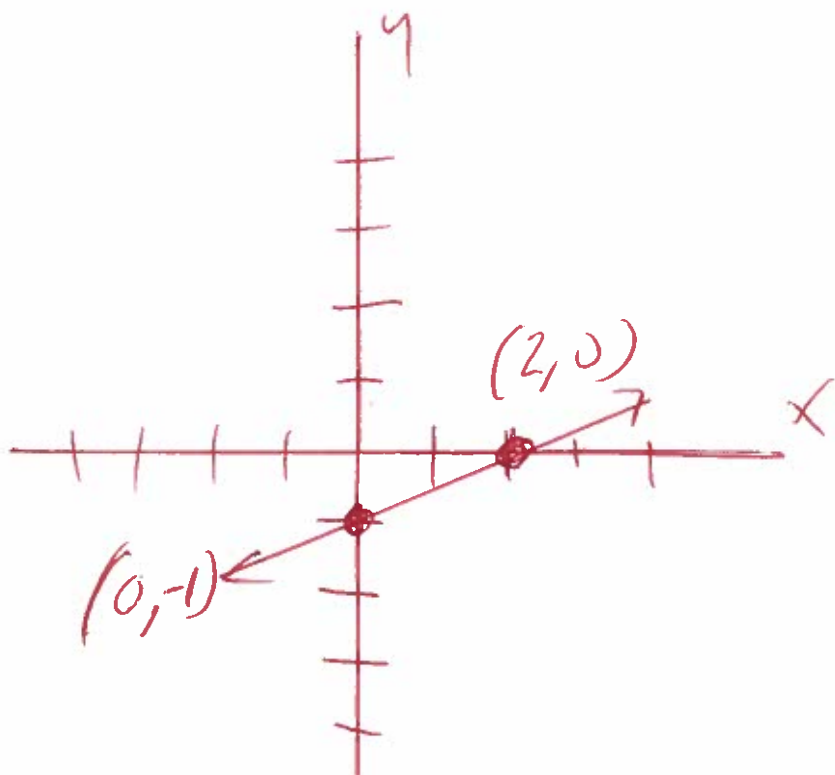
$$y = -1$$

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

$$y = 1 - 1$$

$$y = 0$$

x	y
0	-1
2	0



59. $4x - 2y = 4$

find x -intercept let $y=0$

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

$$4x - 0 = 4$$

$$4x = 4$$

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

x -intercept

$x = 1$

$(1, 0)$

find y -intercept let $x=0$

$$4x - 2y = 4$$

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

$$0 - 2y = 4$$

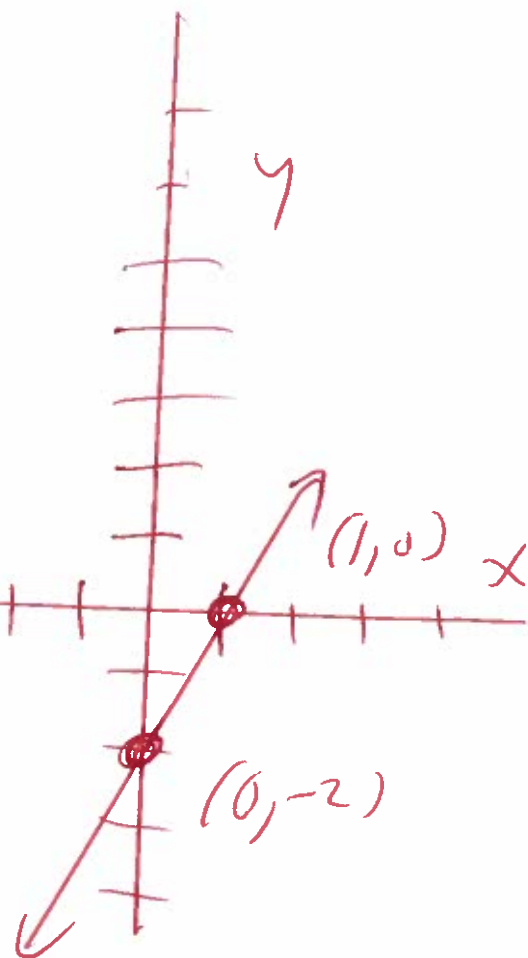
$$-2y = 4$$

$$\frac{-2y}{-2} = \frac{4}{-2}$$

y -intercept

$y = -2$

$(0, -2)$



60) $(-1, 1)$ and $(1, -2)$ find slope
 $x_1 \ y_1 \quad x_2 \ y_2$

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

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

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

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

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

61) $y = 5x + 3$ find slope

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

$$y\text{-intercept} = 3$$

OR

$$(0, 3)$$

formula

$$y = mx + b$$

slope = m

y-intercept = b

OR

$$(0, b)$$

62) $6x + y = 3$ find slope

$$6x + y - 6x = 3 - 6x$$
$$y = 3 - 6x$$

$$y = -6x + 3$$

$$\text{Slope} = m = -6$$

$$y\text{-intercept} = 3$$

OR

$$(0, 3)$$

$$y = mx + b$$

$$\text{Slope} = m$$

$$y\text{-intercept} = b$$

OR

$$(0, b)$$

63) $9x - 5y = 45$ find slope

$$9x - 5y - 9x = 45 - 9x$$

$$-5y = 45 - 9x$$

$$\frac{-5y}{-5} = \frac{45}{-5} - \frac{9x}{-5}$$

$$y = -9 + \frac{9}{5}x$$

$$y = \frac{9}{5}x - 9$$

$$\text{Slope} = m = \frac{9}{5}$$

$$y\text{-intercept} = -9$$

OR

$$(0, -9)$$

formula

$$y = mx + b$$

$$\text{Slope} = m$$

$$y\text{-intercept} = b$$

OR

$$(0, b)$$

64) Slope = $m = 3$ at point $(-4, 7)$ find equation
of the line x_1, y_1

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

$$y - (7) = 3(x - (-4))$$

$$y - 7 = 3(x + 4)$$

$$y - 7 = 3x + 12$$

$$y - \cancel{x} + \cancel{1} = 3x + 12 + 7$$

$$y = 3x + 19$$

65) $x^2 - 3x + 1$, $x = -3$

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

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

$$9 + 9 + 1 =$$

$$18 + 1 =$$

$$19 =$$

66

$$3x - y = 9$$

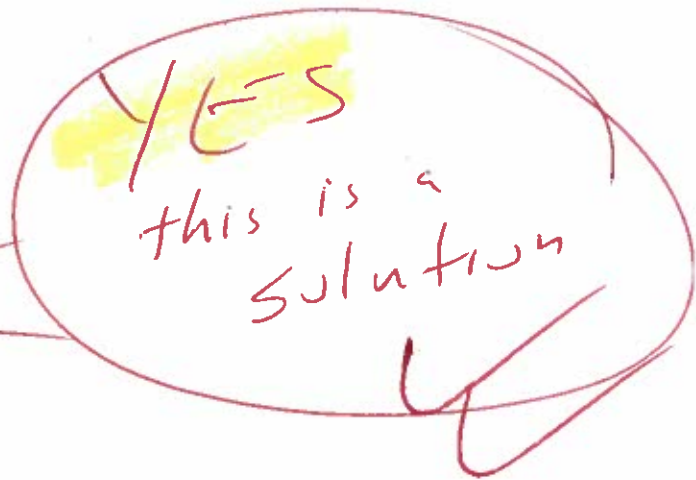
$$x + 2y = 17$$

IS (5, 6) a solution?
x y

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

$$15 - 6 = 9$$

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

YES
this is a solution


$$(5) + 2(6) = 17$$

$$5 + 12 = 17$$

$$17 = 17 \text{ Good } \checkmark$$

$$3x - y = 9$$

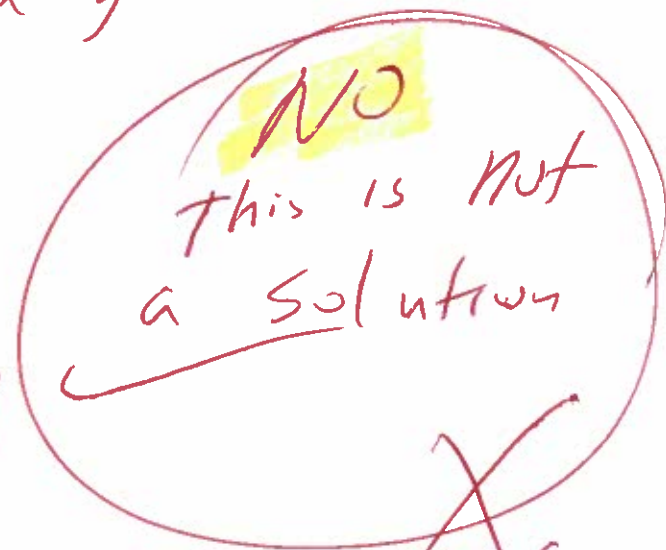
$$x + 2y = 17$$

IS (4, 3) a solution?
x y

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

$$12 - 3 = 9$$

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

NO
this is NOT a solution


$$(4) + 2(3) = 17$$

$$4 + 6 = 17$$

$$10 \neq 17 \text{ BAD}$$

67

$$x + 3y = 3$$

$$5x + 2y = -24$$

$$\begin{pmatrix} x + 3y = 3 \\ 5x + 2y = -24 \end{pmatrix} \begin{pmatrix} -2 \\ 3 \end{pmatrix} \text{ Mult}$$

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

$$15x + 6y = -72$$

$$13x + 0 = -78$$

$$13x = -78$$

$$\frac{13x}{13} = \frac{-78}{13}$$

$$x = -6$$

Subst

$$x + 3y = 3$$

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

$$-6 + 3y = 3$$

$$-6 + 3y + 6 = 3 + 6$$

$$3y = 9$$

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

$$y = 3$$

$$(x, y) = (-6, 3)$$

$$(68) \quad (-7y^5z^7)(2yz^2) =$$
$$(-7y^5z^7)(2y^1z^2) =$$

$$-14y^{5+1}z^{7+2} = \text{add powers}$$

$$-14y^6z^9 =$$

$$(69) \quad (3z^{11})(-4z^8)(z^2) =$$

$$(3z^{11})(-4z^8)(1z^2) =$$

$$-12z^{11+8+2} = \text{add powers}$$

$$-12z^{21} =$$

$$(70)$$

$$(x^2)^6$$

$$x^{(2)(6)} = \text{mult powers}$$

$$x^{12} =$$

$$(71) (2n^4)^5 =$$

$$(2^1 n^4)^5 =$$

$$2^{1(5)} n^{4(5)} = \text{MULT POWERS}$$

$$2^5 n^{20}$$

$$2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 n^{20} =$$

$$32 n^{20} =$$

$$(72) (-6a^4b^5c)^2 =$$

$$(-6)^1 a^4 b^5 c^1)^2 =$$

$$(-6)^{1(2)} a^{4(2)} b^{5(2)} c^{1(2)} = \text{MULT POWERS}$$

$$(-6)^2 a^8 b^{10} c^2 =$$

$$(-6)(-6) a^8 b^{10} c^2 =$$

$$36 a^8 b^{10} c^2 =$$

73 $\left(\frac{9x^4z}{y^3}\right)^3 =$

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

$$\frac{9^{1(3)} x^{4(3)} z^{1(3)}}{y^{3(3)}} = \text{Mult powers}$$

$$\frac{9^3 x^{12} z^3}{y^9} =$$

$$\frac{9 \cdot 9 \cdot 9 x^{12} z^3}{y^9} =$$

$$\frac{729 x^{12} z^3}{y^9} =$$

$$(74) \quad b^4 b^3 b^6 =$$

$$b^{4+3+6} = \text{add powers}$$

$$b^{13} =$$

$$(75) \quad \frac{4x^3 y^2 z}{xyz} =$$

$$\frac{4x^3 y^2 z^1}{x^1 y^1 z^1} =$$

$$\frac{4x^3 y^2 z^1}{x^1 y^1 z^1} =$$

$$4x^{3-1} y^{2-1} =$$

$$4x^2 y^1 =$$

$$4x^2 y =$$

$$76 \quad P(x) = x^2 + x + 5, \quad P(7)$$

$$P(7) = (7)^2 + (7) + 5$$

$$P(7) = (7)(7) + (7) + 5$$

$$P(7) = 49 + 7 + 5$$

$$P(7) = 56 + 5$$

$$P(7) = 61$$

$$77 \quad -8a^2 - 8ab + 9b^2 - 3a^2 - 6ab + 3b^2 =$$

$$-11a^2 - 14ab + 12b^2 =$$

$$78 \quad (8y^2 + 4y - 7) - (-2y + 9) =$$
$$8y^2 + 4y - 7 + 2y - 9 =$$

$$8y^2 + 6y - 16 =$$

$$79 \quad (-3y^2 - 9y) + (8y^2 + y - 5) =$$
$$-3y^2 - 9y + 8y^2 + y - 5 =$$
$$-3y^2 - 9y + 8y^2 + 1y - 5 =$$

$$5y^2 - 8y - 5 =$$

80

$$(x+4)(x^3 - 5x + 6) =$$

$$x^4 - 5x^2 + 6x + 4x^3 - 20x + 24 =$$

$$x^4 + 4x^3 - 5x^2 - 14x + 24 =$$

81

$$-4x(x^2 + 7x - 3) =$$

$$-4x^3 - 28x^2 + 12x =$$

82

find area

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

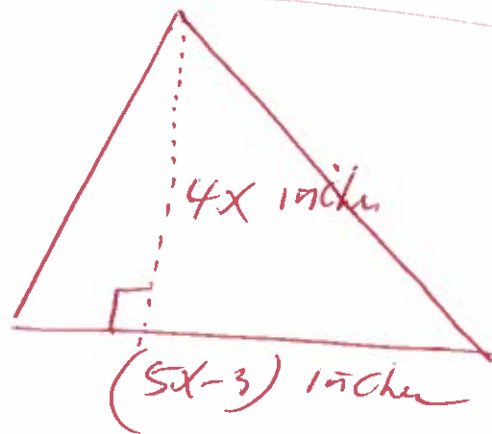
$$A = \frac{1}{2}(5x-3)(4x)$$

$$A = \frac{1}{2}(20x^2 - 12x)$$

$$A = \frac{1}{2}(20x^2) - \frac{1}{2}(12x)$$

$$A = 10x^2 - 6x$$

Square
inches



83

$$5(y-3)(9y-1) =$$

$$5(9y^2 - 1y - 27y + 3) =$$

$$5(9y^2 - 28y + 3) =$$

$$45y^2 - 140y + 15 =$$

84

$$(a-4)(a+4) =$$

$$a^2 + 4a - 4a - 16 =$$

$$a^2 - 16 =$$

85

$$(d-5b)^2 =$$

$$(d-5b)(d-5b) = \text{rewrite}$$

$$d^2 - 5bd - 5bd + 25b^2 =$$

$$d^2 - 10bd + 25b^2 =$$

$$\textcircled{86} \quad 6^{-2} =$$

$$\frac{1}{6^2} = \text{rewrite}$$

$$\frac{1}{6 \cdot 6} =$$

$$\frac{1}{36} =$$

$$\textcircled{87} \quad \left(\frac{1}{4}\right)^{-5} =$$

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

$$\left(2^{-2}\right)^{-5} = \text{rewrite}$$

$$2^{(-2)(-5)} =$$

$$2^{10} =$$

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

$$1024 =$$

88.

$$\frac{b^{-1}}{b^{-7}} =$$

$$\frac{b^7}{b^1} = \text{rewrite}$$

$$b^{7-1} = \text{subtract exponents (powers)}$$

$$b^6 =$$

89.

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

$$-10x^{5-2}y^{-4+2} =$$

$$-10x^3y^{-2} =$$

$$\frac{-10x^3}{y^2} = \text{rewrite}$$

$$(90) \quad (a^2 b^9)^{-4} =$$

$$a^{-2(-4)} b^{9(-4)} = \text{Multa powers}$$
$$a^8 b^{-36} =$$

$$\frac{a^8}{b^{36}} = \text{VARIK}$$

(91) Write the number in scientific notation:

$$33,000 =$$

$$3.3 \times 10^4 =$$

(92) Write the number in scientific notation

$$0.00000115 =$$

$$1.15 \times 10^{-6} =$$

93 $\frac{12p^7 + 8p^6}{4p} =$

$\frac{12p^7}{4p} + \frac{8p^6}{4p} =$ Rewrite

$\frac{12p^7}{4p^1} + \frac{8p^6}{4p^1} =$

$3p^{7-1} + 2p^{6-1} =$ Subtract powers

$3p^6 + 2p^5 =$

94 16, 44 Find GCF Primes 2, 3, 5, 7, 11

GCF = 2 · 2

$= 4$

$\begin{array}{r} \cancel{2} \cancel{16} \\ \cancel{2} \cancel{8} \\ \cancel{2} \cancel{4} \\ \cancel{2} \cancel{2} \\ 1 \end{array}$	$\begin{array}{r} \cancel{2} \cancel{44} \\ \cancel{2} \cancel{22} \\ 11 \cancel{11} \\ 1 \end{array}$
---	--

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

$44 = 2 \cdot 2 \cdot 11$

95. $7x+21 =$ factor

$7(x+3) =$

96. $4xy - 18x^2 =$ factor

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

97. $-36x^5y^4 - 45x^8y^3 =$ factor

$9x^5y^3(-4y - 5x^3) =$

98. $x^2 - 2x - 48 =$ factor

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



- Possible
- 48. 1
 - 24. 1
 - 12. 4
 - 6. 8
 - 16. 3

ck foil

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

$x^2 - 8x + 6x - 48$

$x^2 - 2x - 48$

Good

99 $49x^2 - 225y^2 =$

$(7x)^2 - (15y)^2 =$ rewrite

$(7x + 15y)(7x - 15y) =$

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

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

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

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

$x=8$

OR $x=-2$

ck

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

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

$(0)(10) = 0$

$0 = 0$

✓ good

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

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

$(-10)(0) = 0$

$0 = 0$

✓ good

$$\textcircled{101} \quad 6x(x-9) = 0$$

$$\text{or } 6x = 0 \quad \text{OR} \quad x - 9 = 0$$

$$\frac{6x}{6} = \frac{0}{6} \quad \text{OR} \quad x - 9 + 9 = 0 + 9$$

$$x = 0$$

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

ck

$$6x(x-9) = 0$$

$$6(0)(0-9) = 0$$

$$0(-9) = 0$$

$$0 = 0 \quad \checkmark$$

Good

$$6x(x-9) = 0$$

$$6(9)(9-9) = 0$$

$$54(0) = 0$$

$$0 = 0 \quad \checkmark$$

Good

$$(102) \quad (6x+7)(3x-8)=0$$

$$\text{or } 6x+7=0 \quad \text{OR} \quad 3x-8=0$$

$$6x+\cancel{7}-7=0-7 \quad \text{OR} \quad 3x-\cancel{8}+\cancel{8}=0+8$$

$$6x=-7 \quad \text{OR} \quad 3x=8$$

$$\frac{6x}{6} = \frac{-7}{6} \quad \text{OR} \quad \frac{3x}{3} = \frac{8}{3}$$

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

OR

$$x = \frac{8}{3}$$

(103)

$$x^2 - 12x + 20 = 0$$

$$(x-2)(x-10) = 0$$

$$\text{or } x-2=0 \quad \text{OR} \quad x-10=0$$

$$x-\cancel{2}+\cancel{2}=0+2 \quad \text{OR} \quad x-\cancel{10}+\cancel{10}=0+10$$

$$x=2$$

OR

$$x=10$$

Possible
20.1
10.2
4.5

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

Possible
8.1
~~2.4~~

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

but $x-2=0$ OR $x+4=0$

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

$x=2$

OR

$x=-4$

105

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

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

$$x^2 - 3x - 18 = 4x$$

$$x^2 - 3x - 18 - 4x = 4x - 4x$$

$$x^2 - 7x - 18 = 0$$

$$(x+2)(x-9) = 0$$

or $x+2=0$ OR $x-9=0$

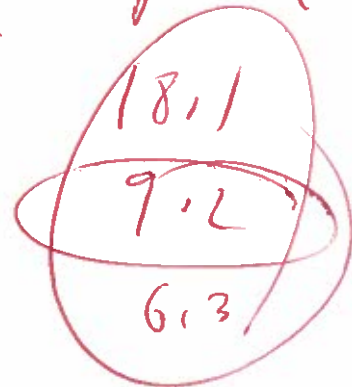
$x + \cancel{x} - \cancel{x} = 0 - 2$ OR $x - \cancel{9} + \cancel{9} = 0 + 9$

$x = -2$

OR $x = 9$

$\{-2, 9\}$

possible



106

$$x^3 - 10x^2 + 16x = 0$$

$$x(x^2 - 10x + 16) = 0$$

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

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

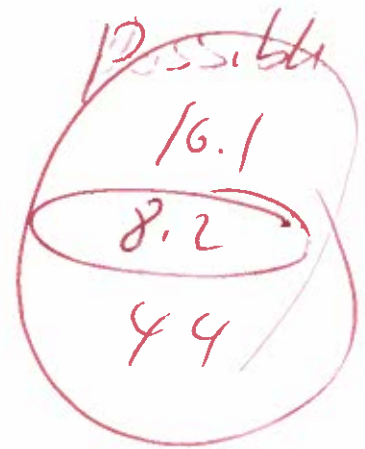
$$x - 2 + 2 = 0 + 2$$

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

$$x = 2$$

$$OR \ x = 8$$

$\{0, 2, 8\}$



107

Find Domain

$$R(x) = \frac{-3+7x}{x^3+x^2-2x}$$

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

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

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

or $x=0$ or $x-1=0$ or $x+2=0$

or $x-1+1=0+1$ or $x+2-2=0-2$

$x=1$

or $x=-2$

Possible

2.1

Domain

$$\{x \mid x \text{ is a real number at } x \neq 0, 1, -2\}$$

108

$$\frac{x+5}{x^2-5x-50} =$$

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

$$\frac{\cancel{1}(x+5)}{(x+5)(x-10)} =$$

$$\frac{1}{x-10} =$$

possible
50 · 1
25 · 2
10 · 5

109

$$\frac{x^2 - 36}{x^2 - 4x - 12} \cdot \frac{x+2}{x} =$$

$$\frac{(x)^2 - (6)^2}{x^2 - 4x - 12} \cdot \frac{x+2}{x} =$$

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

$$\frac{\cancel{(x+6)} \cancel{(x-6)}}{\cancel{(x+2)} \cancel{(x-6)}} \cdot \frac{\cancel{(x+2)}}{x} =$$

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

for mch
 $a^2 - b^2$
 $(a+b)(a-b)$

possible
 12-1
6-2
 3-4

110

$$\frac{7m}{8n} + \frac{9m}{8n} =$$

$$\frac{(7m) + (9m)}{8n} =$$

$$\frac{7m + 9m}{8n} =$$

$$\frac{16m}{8n}$$

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

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

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

Primes 2, 3, 5, 7.

$\frac{2}{2} \frac{16}{8}$	$\frac{2}{2} \frac{8}{4}$
$\frac{2}{2} \frac{8}{4}$	$\frac{2}{2} \frac{4}{2}$
$\frac{2}{2} \frac{4}{2}$	$\frac{2}{2} \frac{2}{1}$
$\frac{2}{2} \frac{2}{1}$	$\frac{2}{2} \frac{1}{1}$

111.

$$\frac{8x-2}{x^2+7x-30} - \frac{7x+1}{x^2+7x-30} =$$

$$\frac{(8x-2) - (7x+1)}{x^2+7x-30} =$$

$$\frac{8x-2-7x-1}{x^2+7x-30} =$$

$$\frac{x-3}{x^2+7x-30} =$$

$$\frac{(x-3)}{(x-3)(x+10)} =$$

$$\frac{1(x-3)}{(x-3)(x+10)} =$$

$$\frac{1}{x+10} =$$

Possible

- 30.1
- 15.2
- 10.3
- 6.5

112

$$6 - \frac{6}{y} = 8$$

$$\cancel{6} - \frac{\cancel{6}}{y} - \cancel{6} = 8 - 6$$

$$-\frac{6}{y} = 2$$

$$-\frac{6}{y} = \frac{2}{1} \quad \text{rewrite}$$

$$-6(1) = y(2) \quad \text{cross mult}$$

$$-6 = 2y$$

$$\frac{-6}{2} = \frac{2y}{2}$$

$$-3 = y$$

113

$$\frac{x-6}{5} = \frac{x}{7}$$

$$7(x-6) = 5(x) \quad \text{cross mult}$$

$$7x - 42 = 5x$$

$$7x - \cancel{42} + \cancel{42} = 5x + 42$$

$$7x = 5x + 42$$

$$7x - 5x = \cancel{5x} + 42 - \cancel{5x}$$

$$2x = 42$$

$$\frac{2x}{2} = \frac{42}{2}$$

$$x = 21$$

114.

$$\frac{2}{2y-5} = -2$$

$$\frac{2}{2y-5} = \frac{-2}{1} \text{ rewrite}$$

$$2(1) = -2(2y-5) \text{ cross mult}$$

$$2 = -4y + 10$$

$$2 - 10 = -4y + \cancel{10 - 10}$$

$$-8 = -4y$$

$$\frac{-8}{-4} = \frac{\cancel{-4y}}{\cancel{-4}}$$

$$2 = y$$

115

$$\frac{5}{y} + \frac{1}{7} = \frac{4}{7y}$$

$$\text{LCD} = 7y$$

$$\frac{5}{y}(7y) + \frac{1}{7}(7y) = \frac{4}{7y}(7y)$$

$$5(7) + 1(y) = 4(1)$$

$$35 + y = 4$$

$$\cancel{35} + y - \cancel{35} = 4 - 35$$

$$y = -31$$

116

$$\sqrt{49x^6}$$

Primes 2, 3, 5, 7

$$\begin{array}{r} 7 \overline{)49} \\ 7 \overline{)7} \\ 1 \end{array}$$

$$\sqrt{7^2 x^6} =$$

$$7^{2/2} x^{6/2} = \text{divide powers}$$

$$7^1 x^3 =$$

$$7x^3 =$$

117

$$\sqrt[3]{64} =$$

Primes 2, 3, 5, 7, ...

$$2 \overline{)64}$$

$$2 \overline{)32}$$

$$2 \overline{)16}$$

$$2 \overline{)8}$$

$$2 \overline{)4}$$

$$2 \overline{)2}$$

$$1$$

$$\sqrt[3]{2^6} =$$

$$2^{6/3} = \text{divide power}$$

$$2^2 =$$

$$(2)(2) =$$

$$4 =$$

$$\textcircled{118} \quad \sqrt{\frac{49}{81}} =$$

$$\frac{\sqrt{49}}{\sqrt{81}} =$$

$$\frac{7}{9} =$$

$$\textcircled{119} \quad f(x) = \sqrt{x-8}$$

$$f(8) = \sqrt{8-8}$$

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

$$f(8) = 0$$

$$f(9) = \sqrt{9-8}$$

$$f(9) = \sqrt{1}$$

$$f(9) = 1$$

$$f(12) = \sqrt{12-8}$$

$$f(12) = \sqrt{4}$$

$$f(12) = 2$$

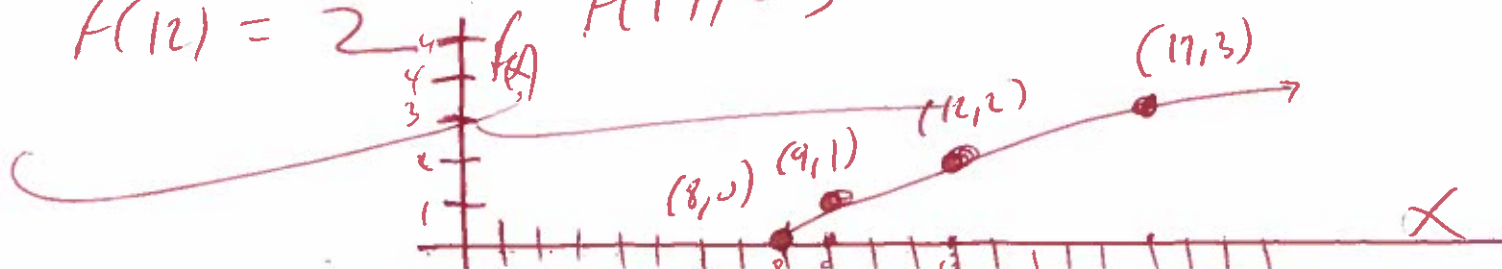
$$f(17) = \sqrt{17-8}$$

$$f(17) = \sqrt{9}$$

$$f(17) = 3$$

x	f(x)
8	0
9	1
12	2
17	3

domain $[8, \infty)$



170

$$\left(\frac{1}{256}\right)^{\frac{1}{4}} =$$

$$\left(\frac{1}{2^8}\right)^{\frac{1}{4}} =$$

$$(2^{-8})^{\frac{1}{4}} =$$

$$2^{-\frac{8}{1}(\frac{1}{4})} = \text{mult power}$$

$$2^{-\frac{8}{4}} =$$

$$2^{-2} =$$

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

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

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

Primi 2, 3, 5, 7.

$$\begin{array}{r}
 2 \overline{) 256} \\
 \underline{2 128} \\
 2 \overline{) 64} \\
 \underline{2 32} \\
 2 \overline{) 16} \\
 \underline{2 8} \\
 2 \overline{) 4} \\
 \underline{2 2} \\
 2 \overline{) 2} \\
 \underline{2 0} \\
 0
 \end{array}$$

121.

$$1024^{2/5}$$

$$(2^{10})^{2/5} =$$

$$2^{4(2/5)} =$$

$$2^{20/5} =$$

$$2^4 =$$

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

$$16 =$$

Prime 2, 3, 5, 7...

$$2 \overline{) 1024}$$

$$2 \overline{) 512}$$

$$2 \overline{) 256}$$

$$2 \overline{) 128}$$

$$2 \overline{) 64}$$

$$2 \overline{) 32}$$

$$2 \overline{) 16}$$

$$2 \overline{) 8}$$

$$2 \overline{) 4}$$

$$2 \overline{) 2}$$

$$1$$

122.

$$\sqrt{45} =$$

$$\sqrt{9 \cdot 5} =$$

$$\sqrt{9} \sqrt{5} =$$

$$3\sqrt{5} =$$

Prime 2, 3, 5, 7...

$$3 \overline{) 45}$$

$$3 \overline{) 15}$$

$$5 \overline{) 5}$$

$$1$$

$$(123) \quad \sqrt{x-7} = 5$$

$$(\sqrt{x-7})^2 = (5)^2$$

$$x-7 = 25$$

$$x-7+7 = 25+7$$

$$x = 32$$

ck

$$\sqrt{x-7} = 5$$

$$\sqrt{32-7} = 5$$

$$\sqrt{25} = 5$$

$$5 = 5 \quad \checkmark$$

Good

124

$$\sqrt{x+4} = \sqrt{2x-1}$$

$$(\sqrt{x+4})^2 = (\sqrt{2x-1})^2$$

$$x+4 = 2x-1$$

$$x+4-4 = 2x-1-4$$

$$x = 2x-5$$

$$1x - 2x = 2x - 5 - 2x$$

$$-1x = -5$$

$$\frac{-1x}{-1} = \frac{-5}{-1}$$

$$x = 5$$

ck

$$\sqrt{x+4} = \sqrt{2x-1}$$

$$\sqrt{5+4} = \sqrt{2(5)-1}$$

$$\sqrt{9} = \sqrt{10-1}$$

$$3 = \sqrt{9}$$

$$3 = 3$$

Good

125 $(X+7)^2 = 36$

$$\sqrt{(X+7)^2} = \pm\sqrt{36}$$

$$X+7 = \pm 6$$

$$X+7 = -6 \quad \text{OR} \quad X+7 = 6$$

$$X+7-7 = -6-7 \quad \text{OR} \quad X+7-7 = 6-7$$

$$X = -13 \quad \text{OR} \quad X = -1$$

CK

CK

$$(X+7)^2 = 36$$

$$(-13+7)^2 = 36$$

$$(-6)^2 = 36$$

$$(-6)(-6) = 36$$

$$36 = 36$$

Good ✓

$$(X+7)^2 = 36$$

$$(-1+7)^2 = 36$$

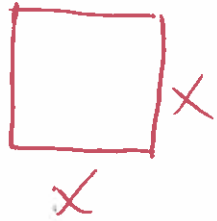
$$(6)^2 = 36$$

$$(6)(6) = 36$$

$$36 = 36$$

Good ✓

126



area is 289
(Square)

$$A = L \cdot W$$

$$289 = (x)(x)$$

$$289 = x^2$$

$$\sqrt{289} = \sqrt{x^2}$$

$$17 = x$$

$$(127) \quad m^2 - 7m + 10 = 0$$

$$(m-2)(m-5) = 0$$

$$\text{or } m-2=0 \quad \text{or } m-5=0$$

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

$$m=2 \quad \text{or } m=5$$

possible
10.1
2.5

OR use Quadratic formula

$$1m^2 - 7m + 10 = 0$$

$$a=1, \quad b=-7, \quad c=10$$

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

$$m = \frac{-(-7) \pm \sqrt{(-7)^2 - 4(1)(10)}}{2(1)}$$

$$m = \frac{7 \pm \sqrt{49 - 40}}{2}$$

$$m = \frac{7 \pm \sqrt{9}}{2}$$

$$m = \frac{7 \pm 3}{2}$$

$$m = \frac{7-3}{2} \quad \text{or } m = \frac{7+3}{2}$$

$$m = \frac{4}{2} \quad \text{or } m = \frac{10}{2}$$

$$m = 2 \quad \text{or } m = 5$$

$$128 \quad m^2 - 4m + 3 = 0$$

(3.1) possible

$$(m-1)(m-3) = 0$$

$$\text{wt } m-1=0 \quad \text{OR} \quad m-3=0$$

$$m-1+1=0+1 \quad \text{OR} \quad m-3+3=0+3$$

$$m=1$$

$$\text{OR } m=3$$

OR use Quadratic formula

$$a=1, b=-4, c=3 \quad | \quad m^2 - 4m + 3 = 0$$

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

$$m = \frac{-(-4) \pm \sqrt{(-4)^2 - 4(1)(3)}}{2(1)}$$

$$m = \frac{4 \pm \sqrt{16 - 12}}{2}$$

$$m = \frac{4 \pm \sqrt{4}}{2}$$

$$m = \frac{4 \pm 2}{2}$$

$$m = 2 \pm 1$$

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

$$m = 1$$

$$\text{OR } m = 3$$

$$(129) \quad 5y = 3y^2 - 2$$

$$5y - 5y = 3y^2 - 2 - 5y$$

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

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

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

$$\text{or } 3y + 1 = 0$$

$$\text{or } y - 2 = 0$$

$$3y + 1 - 1 = 0 - 1$$

OR

$$y - 2 + 2 = 0 + 2$$

$$3y = -1$$

OR

$$y = 2$$

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

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

OR use Quad formula

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

$$a=3, b=-5, c=-2$$

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

$$y = \frac{-(-5) \pm \sqrt{(-5)^2 - 4(3)(-2)}}{2(3)}$$

$$y = \frac{5 \pm \sqrt{25 + 24}}{6}$$

$$y = \frac{5 \pm \sqrt{49}}{6}$$

$$y = \frac{5 \pm 7}{6}$$

$$y = \frac{5-7}{6} \text{ OR } y = \frac{5+7}{6}$$

$$y = -\frac{2}{6} \text{ OR } y = \frac{12}{6}$$

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

$$\text{OR } y = 2$$

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

Possible

3=1

2=1

$$180 \quad x^2 + 4x + 4 = 0$$

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

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

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

$$x = -2 \quad \text{or } x = -2$$

OR use Quad form

$$| x^2 + 4x + 4 = 0$$

$$a=1, b=4, c=4$$

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

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

$$x = \frac{-4 \pm \sqrt{16 - 16}}{2}$$

$$x = \frac{-4 \pm \sqrt{0}}{2}$$

$$x = \frac{-4 \pm 0}{2}$$

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

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

$$x = -2 \quad \text{or} \quad x = -2$$

$$(131) \quad x^2 + 4x + 29 = 0$$

$$x^2 + 4x + 29 = 0$$

$$a=1, b=4, c=29$$

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

$$x = \frac{-(4) \pm \sqrt{(4)^2 - 4(1)(29)}}{2(1)}$$

$$x = \frac{-4 \pm \sqrt{16 - 116}}{2}$$

$$x = \frac{-4 \pm \sqrt{-100}}{2}$$

$$x = \frac{-4 \pm 10i}{2}$$

$$x = -2 \pm 5i$$

$$x = -2 - 5i$$

OR

$$x = -2 + 5i$$

form

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

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

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

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

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