

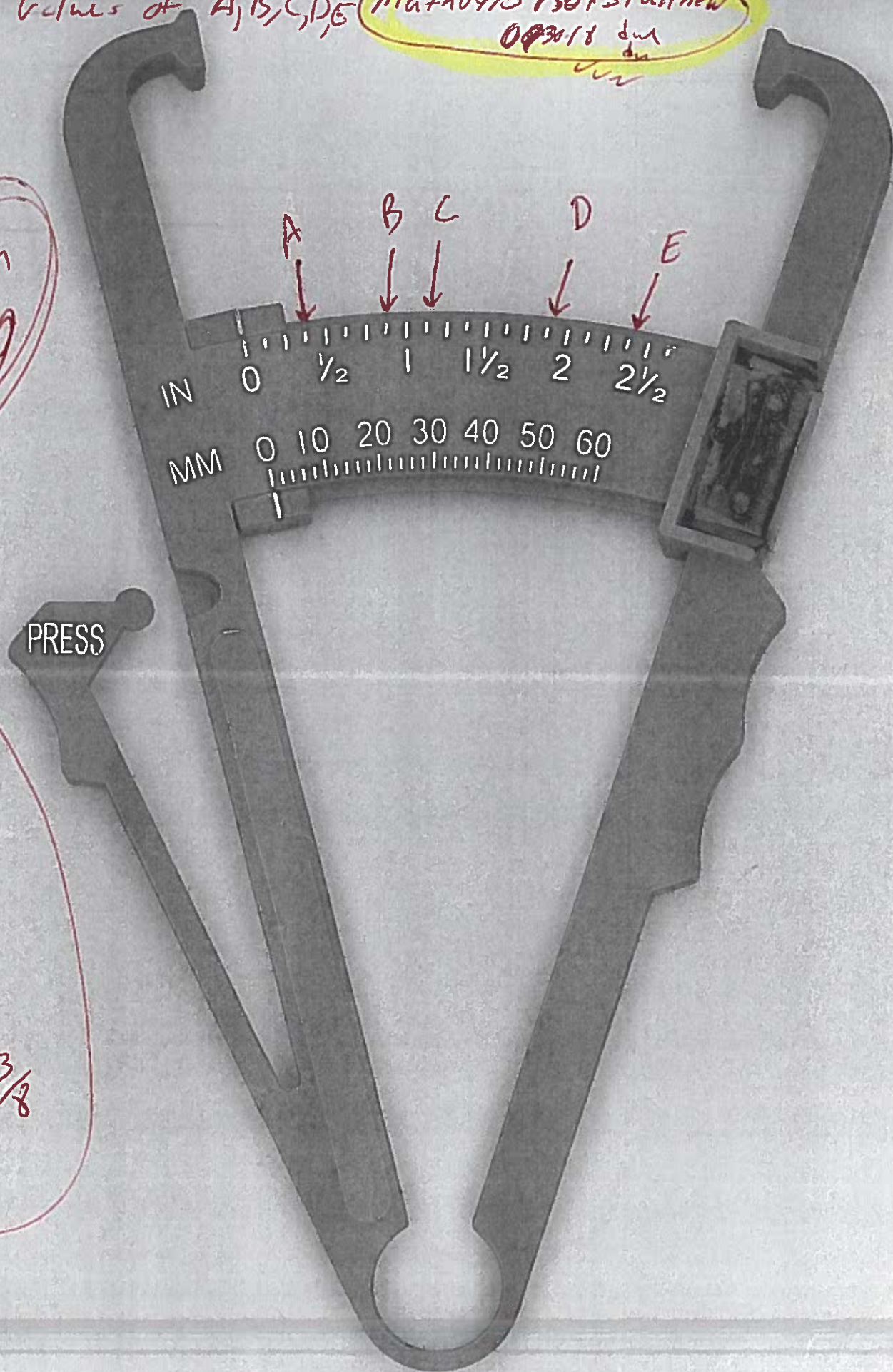
Find the values of A, B, C, D, E

Math 0410 1st trial new

08/30/18 dm

dm

Warm
up



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

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

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

$$D = 1\frac{7}{8}$$

$$E = 2\frac{3}{8}$$

✓✓✓

Graph



② $2x - y$, $x = 6$, $y = -5$

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

$$12 + 5 =$$

$$17 =$$

PEMDAS

③

$$2 + 6 \cdot 8 - 13 =$$

$$2 + 48 - 13 =$$

$$50 - 13 =$$

$$37 =$$

PEMDAS

④

$$6 \cdot 2 - 5 \cdot 7 + (-21) =$$

$$6 \cdot 2 - 5 \cdot 7 - 21 =$$

$$12 - 5 \cdot 7 - 21 =$$

$$12 - 35 - 21 =$$

$$-23 - 21 =$$

$$-44 =$$

PEMDAS

$$5 \quad 7(-14) \div [4(-7) - 9(-3)] =$$

$$7(-14) \div [-28 + 27] =$$

$$7(-14) \div [-1] =$$

$$-98 \div [-1] =$$

$$98 =$$

PEMDAS

$$6 \quad x^2 - y, \quad x = -4, \quad y = 6$$

$$(-4)^2 - (6) =$$

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

$$16 - 6 =$$

$$10 =$$

PEMDAS

$$7 \quad \text{find average}$$

$$\frac{(-11) + (6) + (0) + (9) + (9) + (8) + (0)}{7} =$$

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

$$3 =$$

PEMDAS

8.

$$d - 8 = -1$$

$$d - \cancel{8} + \cancel{8} = -1 + 8$$

$$d = 7$$

ck

$$d - 8 = -1$$

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

$$7 - 8 = -1$$

$$-1 = -1$$

✓ Good

9.

$$\frac{n}{7} = -5$$

$$\frac{1n}{7} = \frac{-5}{1}$$

$$\frac{7}{1} \left(\frac{1n}{7} \right) = \frac{7}{1} \left(\frac{-5}{1} \right) \quad \text{Mult}$$

$$\cancel{7}n = \frac{-35}{1}$$

$$n = -35$$

10

$$4x - 10x =$$

$$-6x =$$

11.

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

$$-16y - 28 =$$

PEMDAS

12.

$$6y - 4(y-1) + 3 =$$

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

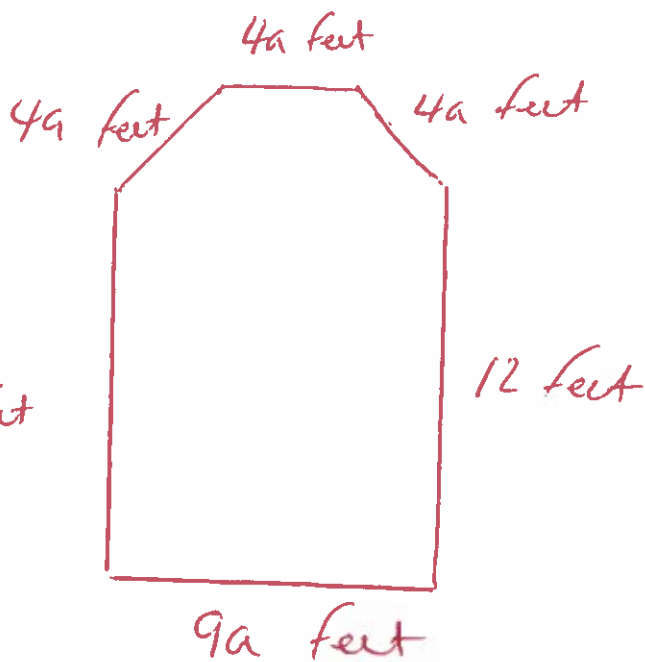
$$2y + 7 =$$

PEMDAS

13.

find perimeter

Start → 12 feet

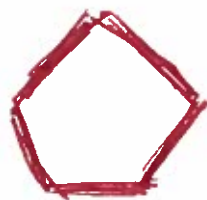


$$P = 12 + 4a + 4a + 4a + 12 + 9a$$

$$P = 21a + 24 \text{ feet}$$

PEMDAS

14) find perimeter



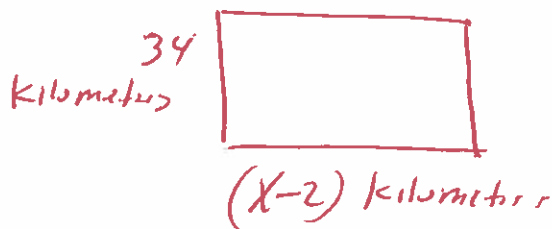
EACH
SIDE
 $-4x+10$
inches

$$P = 5(-4x + 10)$$

$$P = -20x + 50 \text{ inches}$$

PEMDAS

15) find area



$$A = LW$$

$$A = (x-2)(34)$$

$$A = 34x - 68 \text{ Square kilometers}$$

PEMDAS

16) find area

$$L = 38 \text{ feet, } W = 28 \text{ feet}$$

$$A = LW$$

$$A = (38)(28)$$

$$A = 1064 \text{ Square feet}$$

PEMDAS

17

find Perimeter

$$P = 2L + 2W$$

$$P = 2(25) + 2(23)$$

$$P = 50 + 46$$

$$P = 96 \text{ feet}$$

$$L = 25 \text{ feet}, W = 23 \text{ feet}$$

PEDAS

18

$$3(5x - 3) = 16x$$

$$15x - 9 = 16x$$

$$15x - \cancel{9} + \cancel{9} = 16x + 9$$

$$15x = 16x + 9$$

$$15x - 16x = \cancel{16x} + 9 - \cancel{16x}$$

$$-1x = 9$$

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

$$x = -9$$

PEDAS

19

$$-4(x + 9) - 45 = 7 - 64$$

$$-4(x + 9) - 45 = -57$$

$$-4x - 36 - 45 = -57$$

$$-4x - 81 = -57$$

$$-4x - \cancel{81} + \cancel{81} = -57 + 81$$

$$-4x = 24$$

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

$$x = -6$$

PEDAS

20

$$\frac{x}{-3} = 5^2 - |-19| - (-3)$$

$$\frac{x}{-3} = (5)(5) - (19) - (-3)$$

$$\frac{x}{-3} = 25 - 19 + 3$$

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

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

$$\frac{1x}{-3} = \frac{9}{1}$$

$$\frac{-3}{1} \left(\frac{1x}{-3} \right) = \frac{-3}{1} \left(\frac{9}{1} \right)$$

$$\frac{-3x}{-3} = \frac{-27}{1}$$

$$x = -27$$

21

$$5x - 1 = 6x + 5$$

$$5x - 1 + 1 = 6x + 5 + 1$$

$$5x = 6x + 6$$

$$5x - 6x = 6x + 6 - 6x$$

$$-1x = 6$$

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

$$x = -6$$

PEMDAS

absolute value
form

Examples

$$|-2| = 2$$

$$|2| = 2$$

$$|-7| = 7$$

$$|-10| = 10$$

$$|0| = 0$$

$$|-2.5| = 2.5$$

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

$$|-3-4| =$$

$$|-7| =$$

$$7$$

PEMDAS

22

$$-14x - 20 = -12x + 80$$

$$-14x - \cancel{20} + \cancel{20} = -12x + 80 + 20$$

$$-14x = -12x + 100$$

$$-14x + 12x = \cancel{-12x} + 100 + \cancel{12x}$$

$$-2x = 100$$

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

$$x = -50$$

PEMDAS

23

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

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

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

$$3y = y$$

$$3y = 1y$$

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

$$2y = 0$$

$$\frac{2y}{2} = \frac{0}{2}$$

$$y = 0$$

PEMDAS

24. $4t - 4 = 5(t+2)$

$$4t - 4 = 5t + 10$$

$$4t - \cancel{4} + \cancel{4} = 5t + 10 + 4$$

$$4t = 5t + 14$$

$$4t - 5t = 5t + 14 - 5t$$

$$-1t = 14$$

$$\frac{-1t}{-1} = \frac{14}{-1}$$

$$t = -14$$

Pem DAS

25

$$3(5c - 1) - 3 = 12c + 6$$

$$15c - 3 - 3 = 12c + 6$$

$$15c - 6 = 12c + 6$$

$$15c - \cancel{6} + \cancel{6} = 12c + 6 + 6$$

$$15c = 12c + 12$$

$$15c - 12c = \cancel{12c} + 12 - \cancel{12c}$$

$$3c = 12$$

$$\frac{3c}{3} = \frac{12}{3}$$

$$c = 4$$

Pem DAS

26

$$5n + 15 = 40$$

$$5n + 15 - 15 = 40 - 15$$

$$5n = 25$$

$$\frac{5n}{5} = \frac{25}{5}$$

$$n = 5$$

27

During the women's basketball championship game, team A scored 6 more points than team B. Together both teams scored a total of 164 points. How many points did the Champion team A score during the game?

A = Champion team

B = Loser team

$$A + B = 164$$

$$A - B = 6$$

$$2A + 0 = 170$$

$$2A = 170$$

$$\frac{2A}{2} = \frac{170}{2}$$

$$A = 85$$

Subst

Team A = 85

Champion

Team

$$(A, B) = (85, 79)$$

$$A + B = 164$$

$$85 + B = 164$$

$$85 + B - 85 = 164 - 85$$

$$B = 79$$

Team B = 79

Loser
Team

28

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

Prime 2, 3, 5, 7...

$$\begin{array}{r} 3 \overline{) 9} \\ 3 \overline{) 3} \\ 1 \end{array}$$

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

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

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

29

$$\frac{3}{22} \cdot \frac{1}{7} \cdot \frac{11}{6} =$$

Prime 2, 3, 5, 7, 11, 13

$$\begin{array}{r} 2 \overline{) 22} \\ 11 \overline{) 11} \\ 1 \end{array}$$

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

$$\frac{(3)}{(2)(11)} \cdot \frac{1}{(7)} \cdot \frac{(11)}{(2)(3)} =$$

$$\frac{(\cancel{3})}{(2)(\cancel{11})} \cdot \frac{1}{(7)} \cdot \frac{(\cancel{11})}{(\cancel{2})(\cancel{3})} =$$

$$\frac{1}{28} =$$

30

$$\left(-\frac{2}{7}\right)^2 =$$

$$\left(-\frac{2}{7}\right)\left(-\frac{2}{7}\right) =$$

$$\frac{4}{49} =$$

PENDAS

31

$$\frac{5}{6} \div \frac{11}{12} =$$

$$\frac{5}{6} \cdot \frac{12}{11} =$$

$$\frac{(5)}{(2)(3)} \cdot \frac{(2)(2)(3)}{(11)} =$$

$$\frac{5}{\cancel{(2)}(3)} \cdot \frac{\cancel{(2)}(2)(\cancel{3})}{(11)} =$$

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

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

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

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

32

$$\frac{18x^2}{35y} \div \frac{30x}{49y} =$$

$$\frac{18x^2}{35y} \cdot \frac{49y}{30x} =$$

$$\frac{(2)(3)(3)xx}{(5)(7)(y)} \cdot \frac{(7)(7)(y)}{(2)(3)(5)x} =$$

$$\frac{\cancel{(2)}(\cancel{3})(3)xx}{(5)(\cancel{7})(y)} \cdot \frac{\cancel{(7)}(\cancel{7})(y)}{\cancel{(2)}(\cancel{3})(5)x} =$$

$$\frac{2 \cancel{1} x}{25} =$$

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

$$\begin{array}{r} 2 \overline{) 18} \\ 3 \overline{) 9} \\ 3 \overline{) 3} \\ 1 \end{array} \quad \begin{array}{r} 5 \overline{) 35} \\ 7 \overline{) 7} \\ 1 \end{array} \quad \begin{array}{r} 7 \overline{) 49} \\ 7 \overline{) 7} \\ 1 \end{array} \quad \begin{array}{r} 2 \overline{) 30} \\ 3 \overline{) 15} \\ 5 \overline{) 5} \\ 1 \end{array}$$

PEMDAS

33

$$\frac{3}{8}(32) = \text{Prima } 2, 3, 5, 7, 11, 13, \dots$$

$$\frac{3}{8} \left(\frac{32}{1} \right) =$$

$\begin{array}{r} 2 \overline{) 8} \\ 2 \overline{) 4} \\ 2 \overline{) 2} \\ 1 \end{array}$	$\begin{array}{r} 2 \overline{) 32} \\ 2 \overline{) 16} \\ 2 \overline{) 8} \\ 2 \overline{) 4} \\ 2 \overline{) 2} \\ 1 \end{array}$
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$$\frac{(3)}{(2)(2)(2)} \cdot \frac{(2)(2)(2)(2)(2)}{1} =$$

$$(3)(2)(2) =$$

$$12 =$$

34

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

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

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

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

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

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

$$\text{Prima } 2, 3, 5, 7, 11, 13, \dots$$

$\begin{array}{r} 2 \overline{) 12} \\ 2 \overline{) 6} \\ 3 \overline{) 3} \\ 1 \end{array}$	$\begin{array}{r} 2 \overline{) 20} \\ 2 \overline{) 10} \\ 5 \overline{) 5} \\ 1 \end{array}$
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35

$$\frac{1}{3} + \frac{2}{9} =$$

$$\frac{1}{3} \left(\frac{3}{3} \right) + \frac{2}{9} =$$

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

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

$$\frac{5}{9} =$$

$$LCD = 9$$

Prime 2, 3, 5, 7, 11, 13...

$$\begin{array}{r} 3 \overline{)3} \\ 1 \end{array}$$

$$\begin{array}{r} 3 \overline{)9} \\ 3 \overline{)3} \\ 1 \end{array}$$

$$3 = 3$$

$$9 = 3 \cdot 3$$

$$LCD = 3 \cdot 3 = 9$$

36

$$\frac{1}{4} - \frac{3}{10} =$$

$$\frac{1}{4} \left(\frac{5}{5} \right) - \frac{3}{10} \left(\frac{2}{2} \right) =$$

$$\frac{5}{20} - \frac{6}{20} =$$

$$\frac{5-6}{20} =$$

$$\frac{-1}{20} =$$

Prime 2, 3, 5, 7, 11, 13...

$$\begin{array}{r} 2 \overline{)4} \\ 2 \overline{)2} \\ 1 \end{array}$$

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

$$4 = 2 \cdot 2$$

$$10 = 2 \cdot 5$$

$$LCD = 2 \cdot 2 \cdot 5 = 20$$

37, $\frac{\frac{4}{5}}{\frac{4}{9}} =$

PEMDAS

$\frac{4}{5} \circ \frac{9}{4} = \text{revert}$

$\frac{\cancel{4}}{5} \circ \frac{9}{\cancel{4}} =$

$\frac{9}{5} =$

38, $-28 = \frac{4}{7}x$

$\left(\frac{7}{4}\right)\left(-\frac{28}{1}\right) = \frac{7}{\cancel{4}}\left(\frac{\cancel{4}x}{7}\right) \text{ mult}$

~~$\frac{7}{4} \cdot -28 = x$~~

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

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

$-\frac{49}{1} = x$

$-49 = x$

Prime 2, 3, 5, 7, 11, 13

$2 \overline{) 4}$
 $2 \overline{) 28}$
 $2 \overline{) 2}$
 1
 $7 \overline{) 7}$
 1

39

$$\frac{z}{5} = \frac{z}{9} + 1$$

$$LCD = 45$$

$$\frac{z}{5} = \frac{z}{9} + \frac{1}{1}$$

$$\frac{z}{5}(45) = \frac{z}{9}(45) + \frac{1}{1}(45) \quad \text{mult}$$

$$z(9) = z(5) + 1(45) \quad \text{div}$$

$$9z = 5z + 45$$

$$9z - 5z = 5z + 45 - 5z$$

$$4z = 45$$

$$\frac{4z}{4} = \frac{45}{4}$$

$$z = \frac{45}{4}$$

40

$$\frac{1}{2} - \frac{m}{5} = \frac{9}{10}$$

$$LCD = 10$$

$$\frac{1}{2}(10) - \frac{m}{5}(10) = \frac{9}{10}(10) \quad \text{mult}$$

$$1(5) - m(2) = 9(1) \quad \text{div}$$

$$5 - 2m = 9$$

$$5 - 2m - 5 = 9 - 5$$

$$-2m = 4$$

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

$$m = -2$$

41

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

$$LCD = 6$$

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

$$\frac{x}{6}(6) + \frac{1}{1}(6) = \frac{1}{6}(6)$$

mult

divide

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

$$1x + 6 = 1$$

$$1x + \cancel{6} - \cancel{6} = 1 - 6$$

$$1x = -5$$

$$x = -5$$

42

$$\frac{x}{6} + 5 = \frac{x}{5} + 2$$

$$LCD = 30$$

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

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

mult

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

divide

$$5x + 150 = 6x + 60$$

$$5x + \cancel{150} - \cancel{150} = 6x + 60 - 150$$

$$5x = 6x - 90$$

$$5x - 6x = \cancel{6x} - 90 - \cancel{6x}$$

$$-1x = -90$$

$$\frac{-1x}{-1} = \frac{-90}{-1}$$

$$x = 90$$

(43) $-7.899 \times 1000 =$

$-7899. =$ Move decimal right
3 times

(44) $\frac{54.496}{100} =$

$0.54496 =$ Move decimal left
2 times

(45) $2.5x - 47 = 1.8x + 2$

$2.5x - \cancel{47} + \cancel{47} = 1.8x + 2 + 47$

$2.5x = 1.8x + 49$

$2.5x - 1.8x = \cancel{1.8x} + 49 - \cancel{1.8x}$

$.7x = 49$

$\frac{\cancel{.7x}}{\cancel{.7}} = \frac{49}{.7}$

$x = 70$

46

$$\frac{9}{72} = \frac{20}{x}$$

$$9(x) = 72(20) \quad \text{cross mult}$$

$$9x = 1440$$

$$\frac{9x}{9} = \frac{1440}{9}$$

$$x = 160$$

47

Write the fraction as a percent

$$\frac{2}{5}$$

$$\frac{2}{5} = \frac{x}{100}$$

$$2(100) = 5(x) \quad \text{cross mult}$$

$$200 = 5x$$

$$\frac{200}{5} = \frac{5x}{5}$$

$$40 = x$$

or

$$40\% = x$$

48.

40% written as a decimal

$$.40 =$$

40% written as a fraction simplified

$$\frac{40}{100} =$$

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

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

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

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

Prime 2, 3, 5, 7, 11, 13

$$2 \overline{) 40}$$

$$2 \overline{) 20}$$

$$2 \overline{) 10}$$

$$5 \overline{) 5}$$

$$1$$

$$2 \overline{) 100}$$

$$2 \overline{) 50}$$

$$5 \overline{) 25}$$

$$5 \overline{) 5}$$

$$1$$

49.

$$A = P - PD, \quad P = 729, \quad D = 10\% = .10$$

$$A = 729 - 729(.10)$$

$$A = 729 - 72.90 \leftarrow \text{discount}$$

PEMDAS

$$A = \$656.10$$

Sale Price

50

$$A = P + PRT$$

$$P = \$70,000$$

$$R = 10.5\%$$

$$T = 8 \text{ Yr}$$

$$A = \$70,000 + \$70,000(.105)(8)$$

$$A = \$70,000 + \$70,000(.84)$$

$$A = \$70,000 + \$58,800$$

Interest Paid

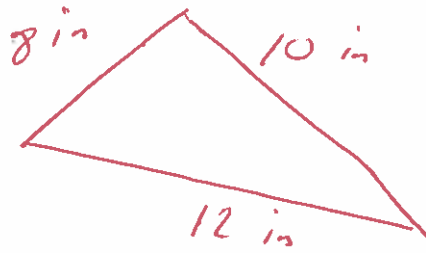
$$A = \$128,800$$

Total Amount Paid

PemDas

51. find perimeter

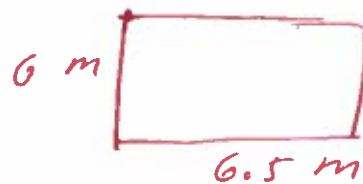
start →



$$P = 8 + 10 + 12$$

$$P = \textcircled{30} \text{ inches}$$

52. find area

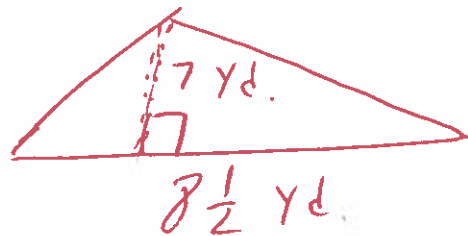


$$A = L \cdot W$$

$$A = (6.5)(6)$$

$$A = \textcircled{39} \text{ square meters}$$

53. find area



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

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

$$A = \frac{1}{2}(\frac{17}{2})(\frac{7}{1})$$

$$A = \frac{119}{4}$$

$$A = \textcircled{29\frac{3}{4}} \text{ square yards}$$

$$\begin{array}{r} 29\frac{3}{4} \\ 4 \overline{) 119} \\ \underline{(8)} \\ 39 \\ \underline{-(36)} \\ (3) \end{array}$$

(54) find area

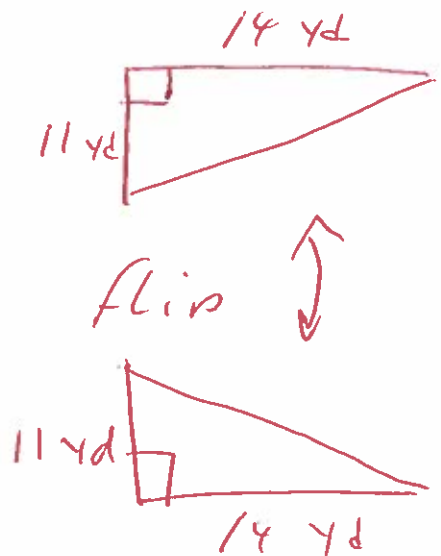
$$A = \frac{1}{2}BH$$

$$A = \frac{1}{2}(14)(11)$$

$$A = \frac{1}{2}(154)$$

$$A = \frac{154}{2}$$

$$A = 77 \text{ Square yards}$$



(55)

$$A = \pi r^2$$

$$r = 4.5$$

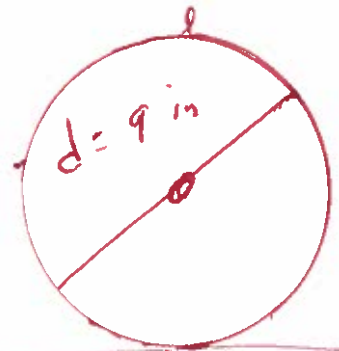
$$A = \pi (4.5)^2$$

$$A = \pi (4.5)(4.5)$$

$$A = \pi (20.25)$$

$$A = 20.25\pi$$

Exact
Square inches



$$r = \frac{1}{2}d = \frac{1}{2}(9) = \frac{9}{2} = 4.5$$

$$A = \pi r^2 \quad \pi = 3.14, \quad r = 4.5$$

$$A = 3.14(4.5)^2$$

$$A = 3.14(4.5)(4.5)$$

$$A = 3.14(20.25) \quad \text{approx}$$

$$A = 63.585 \text{ Square inches}$$

56 $A = \pi r^2$

$$A = \pi (9)^2$$

$$A = \pi (9)(9)$$

$$A = \pi (81)$$

$$A = 81\pi \text{ EXACT Square inches}$$

$$A = \pi r^2$$

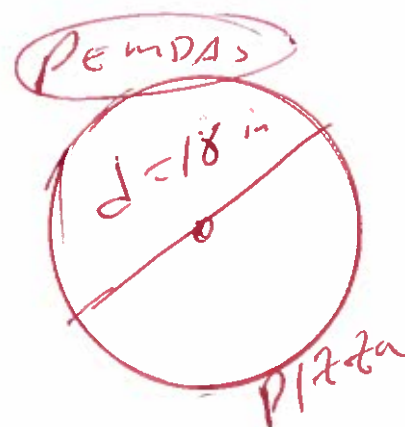
$$\pi = 3.14, r = 9$$

$$A = 3.14 (9)^2$$

$$A = 3.14 (9)(9)$$

$$A = 3.14 (81)$$

$$A = 254.34 \text{ APPROX Square inches}$$



PEMDAS

57. $A = LW$

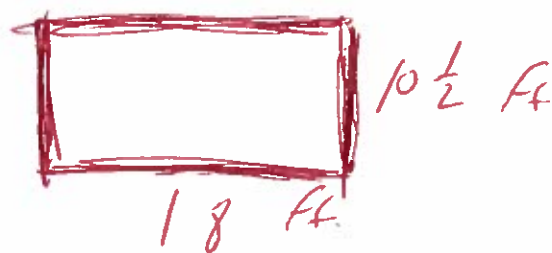
$$A = (18)(10\frac{1}{2})$$

$$A = (\frac{18}{1})(\frac{21}{2})$$

$$A = \frac{378}{2}$$

$$A = 189 \text{ Square feet}$$

$$L = 18 \text{ feet}, W = 10\frac{1}{2} \text{ feet}$$



58.

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

$$F = 185^\circ$$

PEMDAS

$$C = \frac{5}{9}(185 - 32)$$

$$C = \frac{5}{9}(153)$$

$$C = \frac{(5)}{(9)} \cdot \frac{(3)(3)(17)}{1}$$

$$C = \frac{(5)}{(\cancel{3})(\cancel{3})} \cdot \frac{(\cancel{3})(\cancel{3})(17)}{1}$$

$$C = 5(17)$$

$$C = 85$$

Prim 2, 3, 5, 7, 11, 13, 17

$$3 \overline{) 153}$$

$$3 \overline{) 51}$$

$$17 \overline{) 17}$$

$$1$$

$$3 \overline{) 9}$$

$$3 \overline{) 3}$$

$$1$$

59.

$$-6(x+5) - 8 = -38$$

$$-6x - 30 - 8 = -38$$

$$-6x - 38 = -38$$

$$-6x - \cancel{38} + \cancel{38} = -38 + 38$$

$$-6x = 0$$

$$\frac{-6x}{-6} = \frac{0}{-6}$$

$$x = 0$$

PEMDAS

(60) $3x + y = 8$

$y =$

$3x + y - 3x = 8 - 3x$

$y = 8 - 3x$

OR

$y = -3x + 8$

(61) $A = P + PRT$

$R =$

$A - P = P + PRT - P$

$A - P = PRT$

$\frac{A - P}{PT} = \frac{PRT}{PT}$

$\frac{A - P}{PT} = R$

(62) $y < 5$ graph



OR



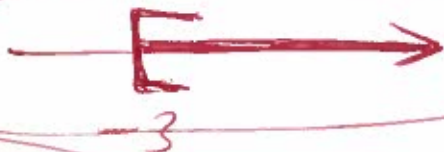
63

$$-4x \leq 12$$

$$\frac{-4x}{-4} \geq \frac{12}{-4}$$

divide by a negative and
turn the alligator around

$$x \geq -3$$



64

$$-8x + 6 \geq 2(5 - 3x)$$

PENDAS

$$-8x + 6 \geq 10 - 6x$$

$$-8x + 6 - 6 \geq 10 - 6x - 6$$

$$-8x \geq -6x + 4$$

$$-8x + 6x \geq -6x + 4 + 6x$$

$$-2x \geq 4$$

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

divide by a negative and
turn the alligator around

$$x \leq -2$$



65

$y = -2x + 4$ graph

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

$$y = 0 + 4$$

$$y = 4$$

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

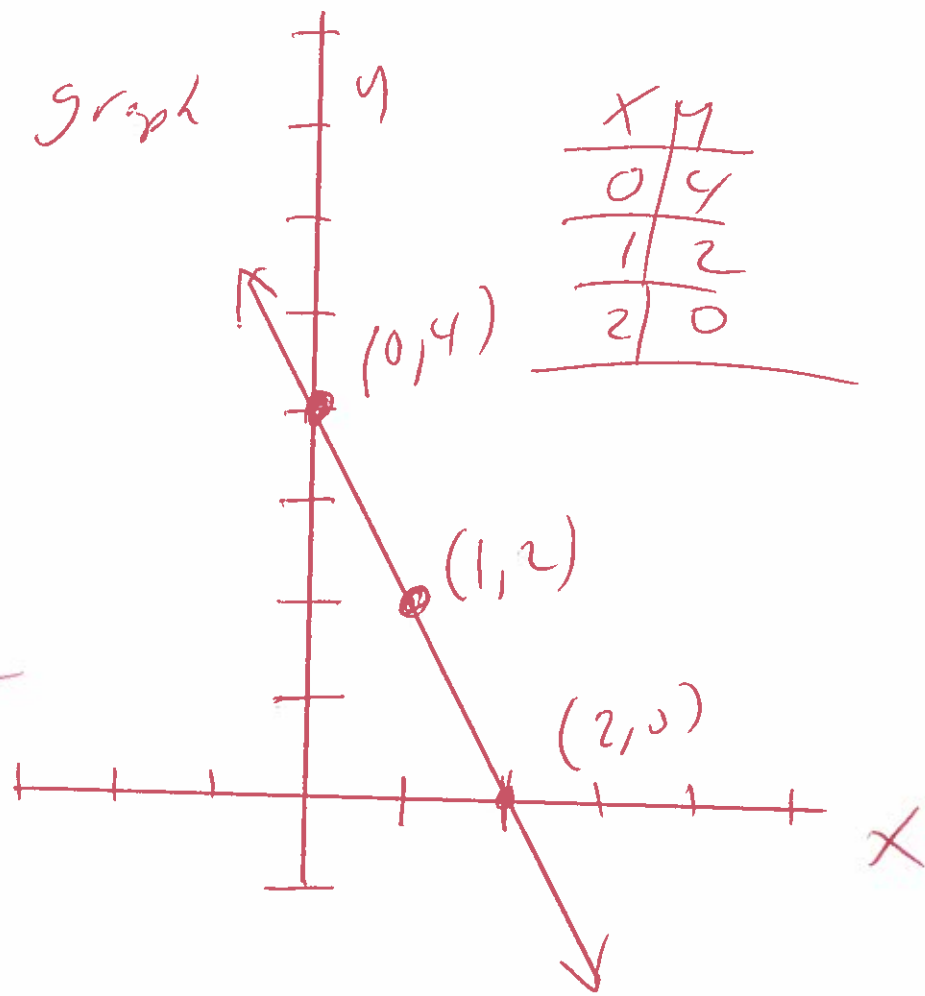
$$y = -2 + 4$$

$$y = 2$$

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

$$y = -4 + 4$$

$$y = 0$$



x	y
0	4
1	2
2	0

graph

66

$$x + y = -6$$

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

$$y = -6 - x$$

$$y = -x - 6$$

form
 $y = mx + b$

$$y = -(0) - 6$$

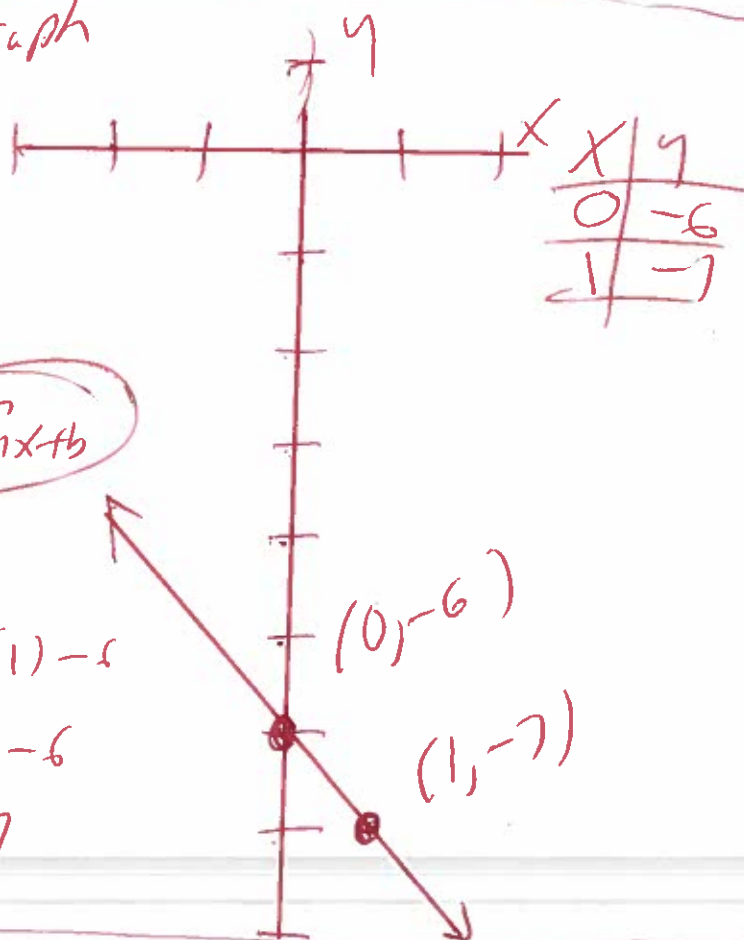
$$y = 0 - 6$$

$$y = -6$$

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

$$y = -1 - 6$$

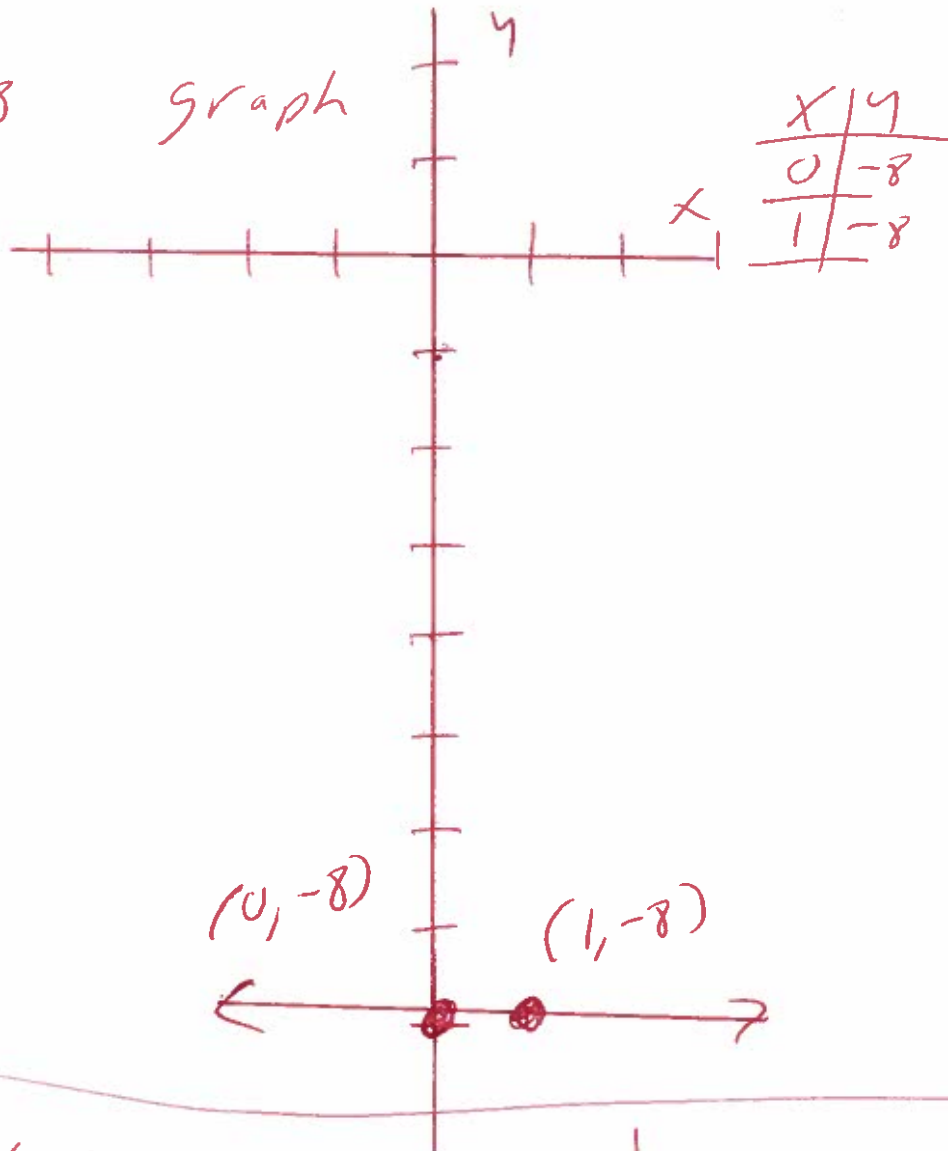
$$y = -7$$



x	y
0	-6
1	-7

(67) $y = -8$

graph



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

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

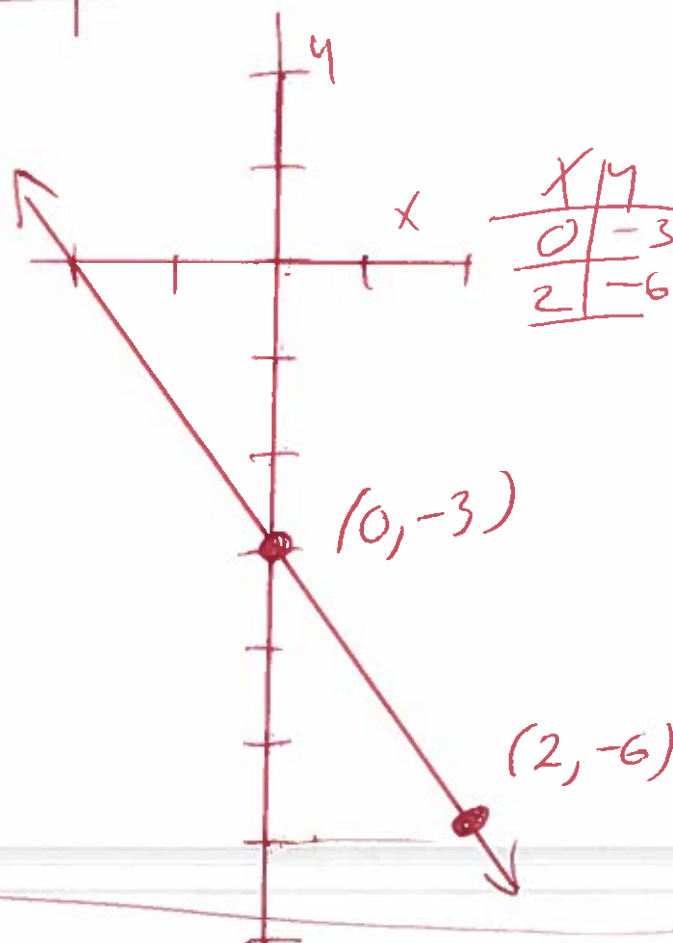
$y = 0 - 3$

$y = -3$

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

$y = -3 - 3$

$y = -6$



69.

Identify the intercepts

X-intercept

 $(-2, 0)$

y-intercept

 $(0, 2)$ X-intercept is $x = -2$ OR $(-2, 0)$ y-intercept is $y = 2$ OR $(0, 2)$

70.

 $5x - 2y = -10$ graphFind x-intercept let $y = 0$

$$5x - 2(0) = -10$$

$$5x - 0 = -10$$

$$5x = -10$$

X-intercept

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

OR $(-2, 0)$

$$x = -2$$

Find y-intercept let $x = 0$

$$5(0) - 2y = -10$$

$$0 - 2y = -10$$

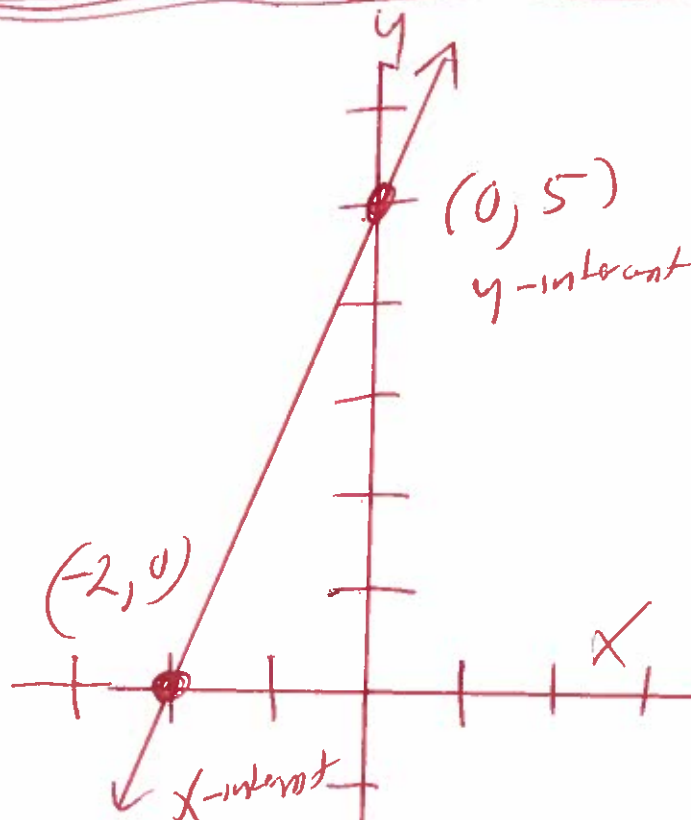
$$-2y = -10$$

$$\frac{-2y}{-2} = \frac{-10}{-2}$$

y-intercept

OR $(0, 5)$

$$y = 5$$



71 $(8, 10)$ and $(1, -2)$ find slope
 $x_1 \ y_1 \quad x_2 \ y_2$

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

$$m = \frac{(10) - (-2)}{(8) - (1)}$$

$$m = \frac{10 + 2}{8 - 1}$$

$$m = \frac{12}{7}$$

PEMDAS

72 $(4, 2)$ and $(2, 2)$ find slope
 $x_1 \ y_1 \quad x_2 \ y_2$

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

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

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

$$m = \frac{0}{2}$$

$$m = 0$$

PEMDAS

73. $y = 5x + 8$ find slope

slope = $m = 5$ ✓ y-intercept = 8
OR
(0, 8)

formula
 $y = mx + b$
↑
slope = m y-intercept = b
OR
(0, b)

74. $10x + y = 8$ find slope

$$10x + y - 10x = 8 - 10x$$

$$y = 8 - 10x$$

$$y = -10x + 8$$

slope = $m = -10$ ✓

y-intercept = 8
OR
(0, 8)

formula
 $y = mx + b$
slope = m y-intercept = b
OR
(0, b)

75. $9x - 4y = 36$ find slope

$$9x - 4y - 9x = 36 - 9x$$

$$-4y = 36 - 9x$$

$$\frac{-4y}{-4} = \frac{36}{-4} - \frac{9x}{-4}$$

$$y = -9 + \frac{9}{4}x$$

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

slope = $m = \frac{9}{4}$ ✓

y-intercept = -9
OR
(0, -9)

formula
 $y = mx + b$
↑
slope = m
y-intercept = b
OR
(0, b)

76

Slope = $7 = m$, Point = $(-2, 4)$
 x_1, y_1

Find the equation
of the line

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

$$y - (4) = 7(x - (-2))$$

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

$$y - 4 = 7x + 14$$

$$y - 4 + 4 = 7x + 14 + 4$$

$$y = 7x + 18$$

PEMDAS

77

$x^2 - 5x + 3$ Eval if $x = -1$

$$(-1)^2 - 5(-1) + 3 =$$

$$(-1)(-1) - 5(-1) + 3 =$$

$$1 + 5 + 3 =$$

$$6 + 3 =$$

$$9 =$$

PEMDAS

78 $2x - y = 3$
 $x + 4y = 6$

Is $(2, 1)$ a solution
 x, y

YES

$(2, 1)$ is a solution

$2(2) - (1) = 3$ Subst

$4 - 1 = 3$

$3 = 3$ ✓ Good

$(2) + 4(1) = 6$ Subst

$2 + 4 = 6$

$6 = 6$ ✓ Good

Is $(4, 5)$ a solution
 x, y

$2x - y = 3$

$x + 4y = 6$

$2(4) - (5) = 3$ Subst

$8 - 5 = 3$

$3 = 3$ ✓ Good

NO

$(4, 5)$ is Not
a solution

$(4) + 4(5) = 6$ Subst

$4 + 20 = 6$

$24 \neq 6$ NO

79

$$x + y = 6$$

$$x = 2y$$

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

$$2y + y = 6$$

$$2y + 1y = 6$$

$$3y = 6$$

$$\frac{3y}{3} = \frac{6}{3}$$

$$y = 2$$

Subst

$$x + y = 6$$

$$x + 2 = 6$$

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

$$x = 4$$

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

Subst

30

$$y = 4x + 1$$

$$2y - 3x = 12$$

Subst

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

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

$$5x + 2 = 12$$

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

$$5x = 10$$

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

$$x = 2$$

Subst

$$y = 4x + 1$$

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

$$y = 8 + 1$$

$$y = 9$$

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

PEKADA 5

81

$$5x + y = 25$$

$$3x - y = 7$$

$$8x + 0 = 32$$

$$8x = 32$$

$$\frac{8x}{8} = \frac{32}{8}$$

$$x = 4$$

Subst

$$5x + y = 25$$

$$5(4) + y = 25$$

$$20 + y = 25$$

$$20 + y - 20 = 25 - 20$$

$$y = 5$$

$$(x, y) = (4, 5)$$

82

$$x + 5y = 11$$

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

$$\begin{pmatrix} x + 5y = 11 \\ 4x + 3y = -7 \end{pmatrix} \begin{pmatrix} -3 \\ 5 \end{pmatrix} \text{mult}$$

$$-3x - 15y = -33$$

$$20x + 15y = -35$$

$$17x + 0 = -68$$

$$17x = -68$$

$$\frac{17x}{17} = \frac{-68}{17}$$

$$x = -4$$

Subst

$$x + 5y = 11$$

$$(-4) + 5y = 11$$

$$-4 + 5y = 11$$

$$\cancel{-4} + 5y + \cancel{4} = 11 + 4$$

$$5y = 15$$

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

$$y = 3$$

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

83) Two numbers total 48 and have a difference of 28. find the two numbers.

$x = 1\text{st number}$

$y = 2\text{nd number}$

$$x + y = 48$$

$$x - y = 28$$

$$2x + 0 = 76$$

$$2x = 76$$

$$\frac{2x}{2} = \frac{76}{2}$$

$$x = 38$$

Subst

$$x + y = 48$$

$$(38) + y = 48$$

$$38 + y = 48$$

$$38 + y - 38 = 48 - 38$$

$$y = 10$$

$$(x, y) = (38, 10)$$

84.

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

PEMDAS

$$(-4b^1c^2)(6b^6c^4) = \text{rewrite}$$

$$-24b^{1+6}c^{2+4} =$$

$$-24b^7c^6 =$$

PEMDAS

85.

$$(2z^{10})(-5z^6)(z^4) =$$

$$(2z^{10})(-5z^6)(1z^4) = \text{rewrite}$$

$$-10z^{10+6+4} =$$

$$-10z^{20} =$$

PEMDAS

86.

$$(x^4)^6 =$$

$$x^{(4)(6)} = \text{mult power,}$$

$$x^{24} =$$

$$(87) (2y^3)^6 =$$

$$((2)^1 y^3)^6 = \text{rewrite}$$

$$(2)^{1(6)} y^{3(6)} = \text{mult power,}$$

$$(2)^6 y^{18} =$$

$$(2)(2)(2)(2)(2)(2) y^{18} =$$

$$64 y^{18}$$

(88)

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

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

$$(-5)^{1(2)} a^{5(2)} b^{4(2)} c^{1(2)} = \text{Mult Power,}$$

$$(-5)^2 a^{10} b^8 c^2 =$$

$$(-5)(-5) a^{10} b^8 c^2 =$$

$$25 a^{10} b^8 c^2 =$$

89

$$\left(\frac{9x^3z^4}{y^5} \right)^2 =$$

$$\left(\frac{(9)^1 x^3 z^4}{y^5} \right)^2 = \text{RT write}$$

$$\frac{(9)^{1(2)} x^{3(2)} z^{4(2)}}{y^{5(2)}} =$$

$$\frac{(9)^2 x^6 z^8}{y^{10}} =$$

$$\frac{(9)(9) x^6 z^8}{y^{10}} =$$

$$\frac{81 x^6 z^8}{y^{10}} =$$

90

$$b^4 b^5 b^7 =$$

$$b^{4+5+7} =$$

$$b^{16} =$$

91

$$\frac{8x^5 y^2 z}{x^3 y z} =$$

$$x^3 y z$$

$$\frac{8x^5 y^2 z}{x^3 y^1 z^1} =$$

$$x^3 y^1 z^1$$

$$8x^{5-3} y^{2-1} =$$

$$8x^2 y^1 =$$

$$8x^2 y =$$

92. $P(x) = x^2 + x + 1$ find $P(7)$

$$P(7) = (7)^2 + (7) + 1$$

$$P(7) = (7)(7) + (7) + 1$$

$$P(7) = 49 + 7 + 1$$

$$P(7) = 56 + 1$$

$$P(7) = 57$$

93. $8a^2 - 9ab + 8b^2 - 6a^2 - 3ab + 2b^2 =$

$$2a^2 - 12ab + 10b^2 =$$

94. $(4y^2 + 7y - 3) - (-2y + 2) =$

$$4y^2 + 7y - 3 + 2y - 2 =$$

$$4y^2 + 9y - 5 =$$

95. $(-7y^2 - 4y) + (5y^2 + 2y - 8) =$

$$-7y^2 - 4y + 5y^2 + 2y - 8 =$$

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

96. $(x+5)(x^3-7x+6) =$

$$x^4 - 7x^2 + 6x + 5x^3 - 35x + 30 =$$

$$x^4 + 5x^3 - 7x^2 - 29x + 30 =$$

97. $-4x(x^2+7x-5) =$

$$-4x^3 - 28x^2 + 20x =$$

98. find area

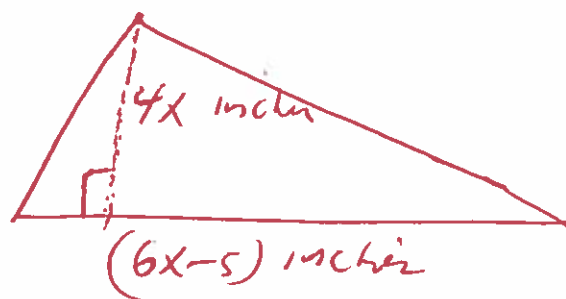
$$A = \frac{1}{2}BH$$

$$A = \frac{1}{2}(6x-5)(4x)$$

$$A = \frac{1}{2}(24x^2 - 20x)$$

$$A = \frac{1}{2}(24x^2) - \frac{1}{2}(20x)$$

$$A = 12x^2 - 10x \text{ square inches}$$



$$\begin{aligned}
 99 \quad & 4(y-9)(6y-1) = \\
 & 4(6y^2 - 1y - 54y + 9) = \\
 & 4(6y^2 - 55y + 9) = \\
 & 24y^2 - 220y + 36 =
 \end{aligned}$$

$$\begin{aligned}
 100 \quad & (x+4)^2 = \\
 & (x+4)(x+4) = \text{rewrite} \\
 & x^2 + 4x + 4x + 16 = \\
 & x^2 + 8x + 16 =
 \end{aligned}$$

$$\begin{aligned}
 101 \quad & (a-3)(a+3) = \\
 & a^2 + \cancel{3a} - \cancel{3a} - 9 = \\
 & a^2 - 9 =
 \end{aligned}$$

$$\begin{aligned}
 102 \quad & 5x^2(3x^2 - 6x + 9) = \\
 & 15x^4 - 30x^3 + 45x^2 =
 \end{aligned}$$

103

$$(4c - 2d)^2 =$$

$$(4c - 2d)(4c - 2d) = \text{rewrite}$$

$$16c^2 - 8cd - 8cd + 4d^2 =$$

$$16c^2 - 16cd + 4d^2 =$$

104

$$3^{-4} =$$

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

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

$$\frac{1}{81} =$$

105

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

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

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

$$2^{(-2)(-2)} = \text{Mult Power}$$

$$2^4 =$$

$$\rightarrow (2)(2)(2)(2) =$$

$$16 =$$

Prime 2, 3, 5, 7

$$\begin{array}{r} 2 \overline{) 4} \\ 2 \overline{) 2} \\ 1 \end{array}$$

$$4 = 2 \cdot 2$$

106 $\frac{y^{-5}}{y} =$

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

$$\frac{1}{y^1 y^5} = \text{rewrite}$$

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

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

107 $\frac{h^{-3}}{h^{-9}} =$

$$\frac{h^9}{h^3} = \text{rewrite}$$

$$h^{9-3} =$$

$$h^6 =$$

108

$$(-4x^4y^{-5})(5x^{-1}y^2) =$$

$$-20x^{4-1}y^{-5+2} =$$

$$-20x^3y^{-3} =$$

$$\frac{-20x^3}{y^3} = \text{rewrite}$$

109

$$(a^{-8}b^5)^{-4} =$$

$$a^{-8(-4)}b^{5(-4)} =$$

$$a^{32}b^{-20} =$$

$$\frac{a^{32}}{b^{20}} = \text{rewrite}$$

110

write the number in scientific notation

$$12000 =$$

$$1.2 \times 10^4 =$$

111

write the number in scientific notation

$$0.00000183 =$$

$$1.83 \times 10^{-6} =$$

(112) $\frac{2p^7 + 12p^3}{2p} =$

$$\frac{2p^7}{2p^1} + \frac{12p^3}{2p^1} =$$

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

$$p^6 + 6p^2 =$$

(113) 27, 36 find GCF Primes, 2, 3, 5, 7.

$$GCF = 3 \cdot 3$$

$$GCF = 9$$

$$\begin{array}{l} 3 \overline{) 27} \\ 3 \overline{) 9} \\ 3 \overline{) 3} \\ 1 \end{array} \quad \begin{array}{l} 2 \overline{) 36} \\ 2 \overline{) 18} \\ 3 \overline{) 9} \\ 3 \overline{) 3} \\ 1 \end{array}$$

$$27 = 3 \cdot 3 \cdot 3$$

$$36 = 2 \cdot 2 \cdot 3 \cdot 3$$

(114) $9x + 18$ - factor GCF

$$9(x+2) =$$

115

$$4xy - 54x^2 =$$

$$4x^1y^1 - 54x^2 =$$

factor

$$2x(2y - 27x) =$$

116

$$-16x^6y^4 - 28x^8y^3 =$$

factor

$$4x^6y^3(-4y - 7x^2) =$$

117

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

factor

possibly

6, 1

2, 3

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

ck

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

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

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

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

Good

118. $169x^2 - 225y^2 =$

$$(13x)^2 - (15y)^2 =$$

$$(13x + 15y)(13x - 15y) =$$

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

119. $(x-3)(x+6) = 0$ Solve

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

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

$$x=3$$

$$\text{or } x=-6$$

120. $8x(x-3)=0$ Solve

Let $8x=0$ or $x-3=0$

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

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

$$x=0$$

$$\text{or } x=3$$

Solve
(121) $(5x+7)(2x-5)=0$

but $5x+7=0$ OR $2x-5=0$

$5x+\cancel{7-7}=0-7$ OR $2x-\cancel{5+5}=0+5$

$5x=-7$ OR $2x=5$

$\frac{5x}{5} = \frac{-7}{5}$ OR $\frac{2x}{2} = \frac{5}{2}$

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

OR

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

(122) $x^2 - 13x + 40 = 0$

$(x-5)(x-8)=0$

but $x-5=0$ OR $x-8=0$

$x-\cancel{5+5}=0+5$ OR $x-\cancel{8+8}=0+8$

$x=5$

OR $x=8$

possibly
40.1
20.2
10.4
5.8

123

$$x^2 + 5x - 36 = 0$$

$$(x-4)(x+9) = 0$$

$$\text{but } x-4=0 \text{ OR } x+9=0$$

$$x-4+4=0+4 \text{ OR } x+9-9=0-9$$

$$x=4$$

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

Possibly

36.1

18.2

12.3

6.6

9.4

124

$$(x+3)(x+18) = 6x$$

$$x^2 + 18x + 3x + 54 = 6x$$

$$x^2 + 21x + 54 = 6x$$

$$x^2 + 21x + 54 - 6x = 0$$

$$x^2 + 15x + 54 = 0$$

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

$$\text{but } x+6=0 \text{ OR } x+9=0$$

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

$$x=-6$$

OR

$$x=-9$$

Possibly

54.1

27.2

6.9

3.18

125 $X^3 - 12X^2 + 20X = 0$

$$X(X^2 - 12X + 20) = 0$$

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

or $X = 0$ or $X - 2 = 0$ or $X - 10 = 0$

$$X - \cancel{2} + \cancel{2} = 0 + 2 \quad \text{or} \quad X - 10 + 10 = 0 + 10$$

$$X = 2$$

$$\text{or } X = 10$$

20.1 possible
10.2
4.5

126

$$\frac{X+8}{X^2 - 2X - 80}$$

$$X^2 - 2X - 80$$

$$\frac{(X+8)}{(X+8)(X-10)}$$

$$\frac{1(\cancel{X+8})}{(\cancel{X+8})(X-10)} =$$

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

80.1 possible
40.2
20.4
10.8
5.16

(127)

$$\frac{x^2 - 49}{x^2 - 5x - 14} \cdot \frac{x+2}{x} =$$

$$\frac{(x)^2 - (7)^2}{x^2 - 5x - 14} \cdot \frac{x+2}{x} =$$

$$\frac{(x+7)(x-7)}{(x+2)(x-7)} \cdot \frac{(x+2)}{x} =$$

$$\frac{(x+7)(x-7)}{(x+2)(x-7)} \cdot \frac{(x+2)}{x} =$$

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

(128)

$$\frac{7m}{3n} + \frac{8m}{3n} =$$

$$\frac{7m + 8m}{3n} =$$

$$\frac{15m}{3n} =$$

$$\frac{\cancel{3}(5)m}{\cancel{3}n} =$$

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

Possible
 14.1
 7.2

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

129

$$\frac{9x-9}{x^2-10x+24} - \frac{8x-5}{x^2-10x+24} =$$

$$\frac{(9x-9)-(8x-5)}{x^2-10x+24} =$$

$$\frac{9x-9-8x+5}{x^2-10x+24} =$$

$$\frac{1x-4}{x^2-10x+24} =$$

$$\frac{x-4}{(x-4)(x-6)} =$$

$$\frac{1(x-4)}{(x-4)(x-6)} =$$

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

Possible

24, 1

12, 2

6, 4

3, 8

(130) $4 - \frac{7}{x} = 9$

~~$4 - \frac{7}{x} - 4 = 9 - 4$~~

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

$-\frac{7}{x} = \frac{5}{1}$

$-7(1) = x(5)$ (cross mult)

$-7 = 5x$

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

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

(131) $\frac{z-6}{4} = \frac{z}{7}$

$7(z-6) = 4(z)$ (cross mult)

$7z - 42 = 4z$

$7z - 4z + 42 = 4z + 42$

$7z = 4z + 42$

$7z - 4z = 42 + 42 - 4z$

$3z = 42$

$\frac{3z}{3} = \frac{42}{3}$

$z = 14$

PENDAS

132 $\frac{5}{y} + \frac{1}{3} = \frac{3}{3y}$ $(C) = 3y$

$$\frac{5}{y}(3y) + \frac{1}{3}(3y) = \frac{3}{3y}(3y)$$

$$5(3) + 1(y) = 3(1)$$

$$15 + y = 3$$

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

$$y = -12$$

$$y = -12$$

133 $\sqrt{6x^6} =$

$$\sqrt{4^2 x^6} =$$

$$4^{2/2} x^{6/2} = \text{Divide Powers}$$

$$4^1 x^3 =$$

$$4x^3 =$$

Prime 2, 3, 5, 7.

$$2 \overline{) 16}$$

$$2 \overline{) 8}$$

$$2 \overline{) 4}$$

$$2 \overline{) 2}$$

$$1 \quad 16 = 2 \cdot 2 \cdot 2 \cdot 2$$

$$16 = 4 \cdot 4$$

(134) $\sqrt[3]{27} =$

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

$3^{3/3} =$ direct power

$3^1 =$

$3 =$

Prime 2, 3, 5, 7

$\sqrt[3]{27}$

$3(9)$

$3(3)$

1

(135) $\sqrt{\frac{25}{64}} =$

$\frac{\sqrt{25}}{\sqrt{64}} =$

$\frac{5}{8} =$

136

$$f(x) = \sqrt{x-5}$$

$$f(5) = \sqrt{5-5}$$

$$f(5) = \sqrt{0}$$

$$f(5) = 0$$

Graph

x	f(x)
5	0
6	1
9	2
14	3

$$f(6) = \sqrt{6-5}$$

$$f(6) = \sqrt{1}$$

$$f(6) = 1$$

$$f(9) = \sqrt{9-5}$$

$$f(9) = \sqrt{4}$$

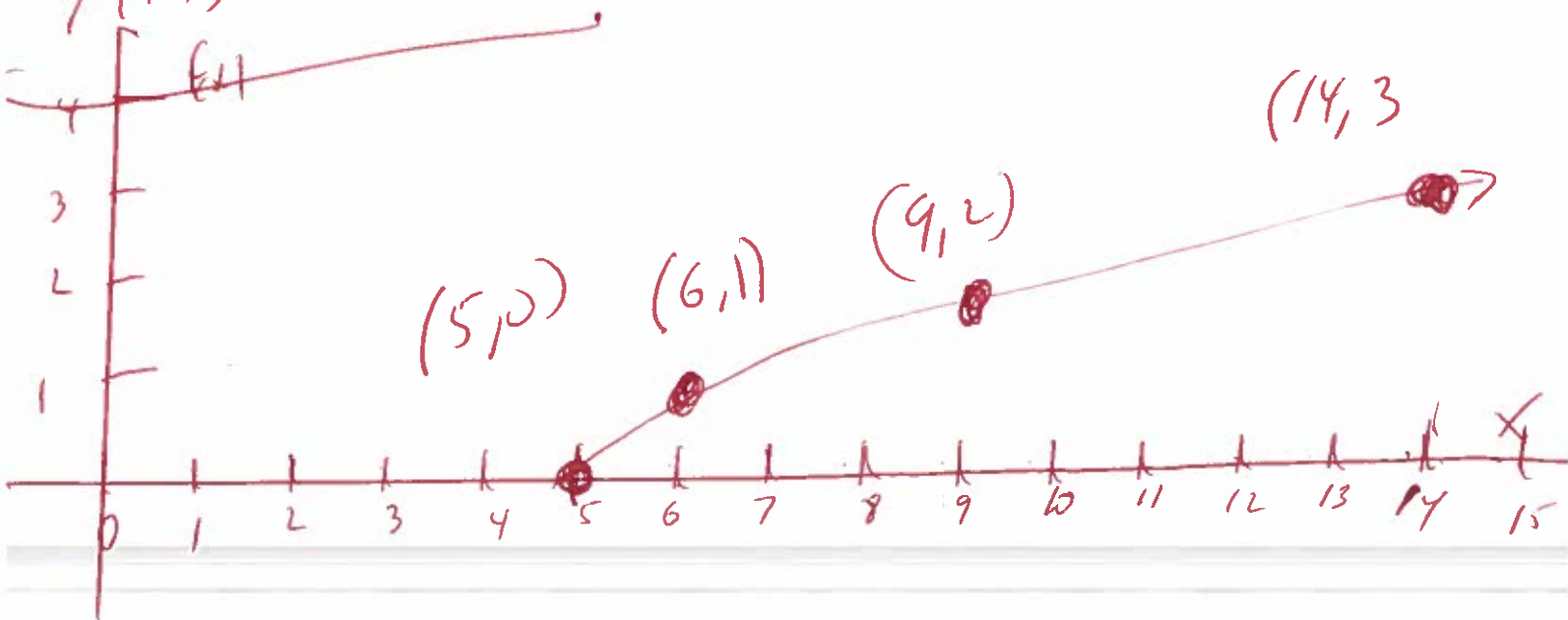
$$f(9) = 2$$

$$f(14) = \sqrt{14-5}$$

$$f(14) = \sqrt{9}$$

$$f(14) = 3$$

domain
 $[5, \infty)$



137

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

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

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

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

$$2^{-2}$$

$$2^{-2} =$$

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

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

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

Prime 2, 3, 5, 7.

$$\begin{array}{r} 2 \overline{) 256} \\ 2 \overline{) 128} \\ 2 \overline{) 64} \\ 2 \overline{) 32} \\ 2 \overline{) 16} \\ 2 \overline{) 8} \\ 2 \overline{) 4} \\ 2 \overline{) 2} \\ 1 \end{array}$$

138.

$$32^{\frac{2}{5}} =$$

$$(2^5)^{\frac{2}{5}} = \text{write}$$

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

$$2^{\frac{10}{5}} =$$

$$2^2 =$$

$$2 \cdot 2 =$$

$$4 =$$

Prime 2, 3, 5, 7...

$$\begin{array}{r} 2 \overline{) 32} \\ 2 \overline{) 16} \\ 2 \overline{) 8} \\ 2 \overline{) 4} \\ 2 \overline{) 2} \\ 1 \end{array}$$

139.

$$\sqrt{18}$$

$$\sqrt{9 \cdot 2} =$$

$$\sqrt{9} \sqrt{2} =$$

$$3\sqrt{2} =$$

Prime 2, 3, 5, 7...

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

(140)

$$\sqrt{36a^6b^7}$$

$$\sqrt{6^2a^6b^6b^1} =$$

$$6^{\frac{2}{2}}a^{\frac{6}{2}}b^{\frac{6}{2}}\sqrt{b^1} =$$

$$6^1a^3b^3\sqrt{b^1} =$$

$$6a^3b^3\sqrt{b} =$$

Prime 2, 3, 5, 7.

$$2 \overline{) 36}$$

$$2 \overline{) 18}$$

$$3 \overline{) 9}$$

$$3 \overline{) 3}$$

$$1$$

(141)

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

$$(\sqrt{x-8})^2 = (7)^2$$

$$x-8 = 49$$

$$x - \cancel{8} + \cancel{8} = 49 + 8$$

$$x = 57$$

ck

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

$$\sqrt{57-8} = 7$$

$$\sqrt{49} = 7$$

$$7 = 7 \text{ Good}$$

PEMDAS

142.

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

$$(\sqrt{3-x})^2 = (x-1)^2$$

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

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

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

$$0 = x^2 - 2x + 1 - 3 + x \quad \text{rewrite}$$

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

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

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

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

~~$x = -1$~~
ck

$x = 2$

PENDAS

Answer

2

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

$$\sqrt{3-(-1)} = (-1)-1$$

$$\sqrt{3+1} = -1-1$$

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

$$2 \neq -2$$

BAD

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

$$\sqrt{3-(2)} = (2)-1$$

$$\sqrt{3-2} = 2-1$$

$$\sqrt{1} = 1$$

$$1 = 1$$

Good

143

$$\sqrt{x+6} = \sqrt{2x-1}$$

$$(\sqrt{x+6})^2 = (\sqrt{2x-1})^2$$

$$x+6 = 2x-1$$

$$\cancel{x+6-6} = 2x-1-6$$

$$x = 2x-7$$

$$1x - 2x = \cancel{2x} - 7 - \cancel{2x}$$

$$-1x = -7$$

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

$$x = 7$$

ck

Answer

7

PENDAS

$$\sqrt{x+6} = \sqrt{2x-1}$$

$$\sqrt{7+6} = \sqrt{2(7)-1}$$

$$\sqrt{7+6} = \sqrt{14-1}$$

$$\sqrt{13} = \sqrt{13}$$

Good

144

$$(9+7i)(9+i) =$$

$$81 + 9i + 63i + 7i^2 =$$

$$81 + 72i + 7i^2 =$$

$$81 + 72i + 7(-1) =$$

$$81 + 72i - 7 =$$

$$74 + 72i =$$

Formula

$$i^2 = -1$$

145

$$(x+9)^2 = 16$$

$$\sqrt{(x+9)^2} = \pm\sqrt{16}$$

$$x+9 = \pm 4$$

$$x+9 = -4 \quad \text{OR} \quad x+9 = 4$$

$$x+9-9 = -4-9 \quad \text{OR} \quad x+9-9 = 4-9$$

$$x = -13$$

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

ck

$$(x+9)^2 = 16$$

$$(-13+9)^2 = 16$$

$$(-4)^2 = 16$$

$$(-4)(-4) = 16$$

$$16 = 16 \quad \text{Good}$$

$$(x+9)^2 = 16$$

$$(-5+9)^2 = 16$$

$$(4)^2 = 16$$

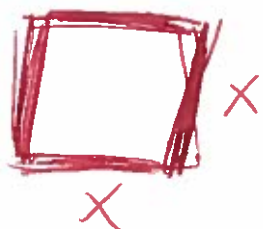
$$(4)(4) = 16$$

$$16 = 16$$

$$\text{Good}$$

PEMDAS

146



If area is 225 sq. feet
find x .

$$A = LW$$

$$225 = (x)(x)$$

$$225 = x^2$$

$$\pm \sqrt{225} = \sqrt{x^2}$$

$$\pm 15 = x$$

~~$$x = -15 \text{ or}$$~~

$$x = 15 \text{ feet}$$

147

$$\sqrt{b^2 - 4ac} = a=5, b=3, c=-8$$

$$\sqrt{(3)^2 - 4(5)(-8)} =$$

$$\sqrt{(3)(3) - 4(5)(-8)} =$$

$$\sqrt{9 - 20(-8)} =$$

$$\sqrt{9 + 160} =$$

$$\sqrt{169} =$$

$$13 =$$

PEMDAS

148

$$m^2 - 4m - 21 = 0$$

$$(m+3)(m-7) = 0$$

$$m+3=0 \quad \text{OR} \quad m-7=0$$

$$m+3-3=0-3 \quad \text{OR} \quad m-7+7=0+7$$

$$m = -3$$

$$\text{OR} \quad m = 7$$

OR use Quadratic formula

$$m^2 - 4m - 21 = 0$$

$$a=1, \quad b=-4, \quad c=-21$$

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

$$m = \frac{-(-4) \pm \sqrt{(-4)^2 - 4(1)(-21)}}{2(1)}$$

$$m = \frac{4 \pm \sqrt{16 + 84}}{2}$$

$$m = \frac{4 \pm \sqrt{100}}{2}$$

$$m = \frac{4 \pm 10}{2}$$

$$m = 2 \pm 5$$

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

$$m = -3$$

$$\text{OR} \quad m = 7$$

21:1
3:7 Possible

$$(149) \quad -9y = 4y^2 + 5$$

$$0 = 4y^2 + 5 + 9y$$

$$0 = 4y^2 + 9y + 5$$

$$0 = (4y+5)(y+1)$$

$$\text{but } 4y+5=0 \text{ or } y+1=0$$

$$4y+5-5=0-5 \quad \text{or} \quad y+1-1=0-1$$

$$4y = -5$$

$$\frac{4y}{4} = \frac{-5}{4}$$

$$y = -\frac{5}{4}$$

or

$$y = -1$$

OR use Quadratic formula

$$4y^2 + 9y + 5 = 0$$

$$a=4, \quad b=9, \quad c=5$$

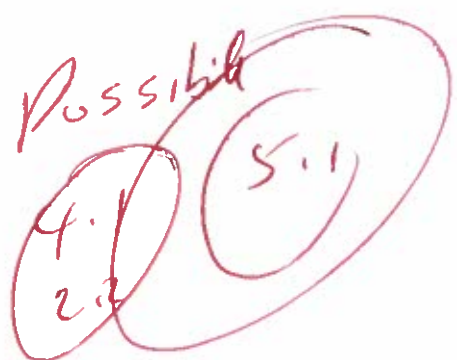
$$y = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$y = \frac{-(9) \pm \sqrt{(9)^2 - 4(4)(5)}}{2(4)}$$

$$y = \frac{-9 \pm \sqrt{81 - 80}}{8}$$

$$y = \frac{-9 \pm \sqrt{1}}{8}$$

$$y = \frac{-9+1}{8} \text{ or } y = \frac{-9-1}{8}$$



$$y = -\frac{8}{8} \text{ or } y = -\frac{10}{8}$$

$$y = -1 \text{ or } y = \frac{1(-5)}{2(4)}$$

$$\text{or } y = -\frac{5}{4}$$

150. $1x^2 + 4x + 8 = 0$

$a=1, b=4, c=8$

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

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

$$x = \frac{-4 \pm \sqrt{16 - 32}}{2}$$

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

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

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

$$x = -2 - 2i$$

OR

$$x = -2 + 2i$$

Use Quadratic formula

formulas

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

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

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

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

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

$$\sqrt{-36} = 6i$$