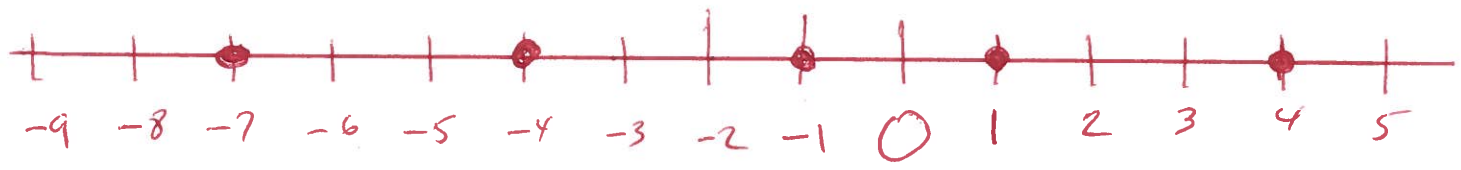


① $4, -1, 4, -4, -7$ graph

math04101116666aleksslep
07-28-18

done
done done done



$$(2) \quad 2x - y, \quad x = 8, \quad y = -5$$

PEMDAS

$$2(8) - (-5) =$$

$$16 + 5 =$$

$$21 =$$

$$(3) \quad 4 + 5 \cdot 8 - 15 =$$

PEMDAS

$$4 + 40 - 15 =$$

$$44 - 15 =$$

$$29 =$$

$$(4) \quad 7 \cdot 6 - 5 \cdot 3 + (-22) =$$

PEMDAS

$$42 - 5 \cdot 3 + (-22) =$$

$$42 - 15 + (-22) =$$

$$27 + (-22) =$$

$$27 - 22 =$$

$$5 =$$

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

$$7(-14) \div [-21 + 20] =$$

PEMDAS

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

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

$$98 =$$

$$6. \quad x^2 - y, \quad x = -5, \quad y = 6$$

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

PEMDAS

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

$$25 - 6 =$$

$$19 =$$

$$7. \quad d - 10 = -14$$

$$d - 10 + 10 = -14 + 10$$

$$d = -4$$

ck

$$d - 10 = -14$$

$$(-4) - 10 = -14$$

$$-4 - 10 = -14$$

$$-14 = -14 \quad \checkmark \text{ Good}$$

$$8. \quad \frac{n}{6} = -4$$

$$\frac{1n}{6} = \frac{-4}{1}$$

$$\cancel{6} \left(\frac{1n}{\cancel{6}} \right) = \frac{\cancel{6}}{1} \left(\frac{-4}{1} \right)$$

$$n = \frac{-24}{1}$$

$$n = -24$$

$$9. \quad 7x - 20x =$$

$$-13x =$$

$$10. \quad -6(2t + 9) =$$

$$-12t - 54 =$$

PEMDAS

$$11. \quad 6y - 3(y - 3) + 4 =$$

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

$$3y + 13 =$$

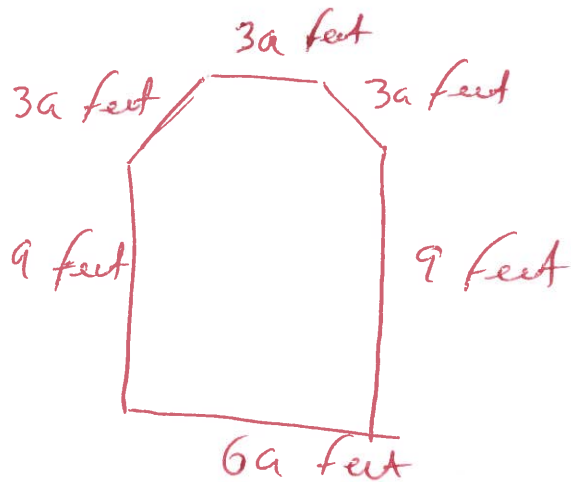
PEMDAS

12) find perimeter

$$P = 9 + 3a + 3a + 3a + 9 + 6a$$

$$P = 15a + 18 \text{ feet}$$

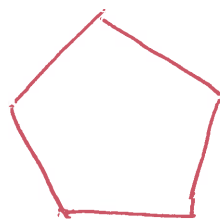
start
→



13) find perimeter

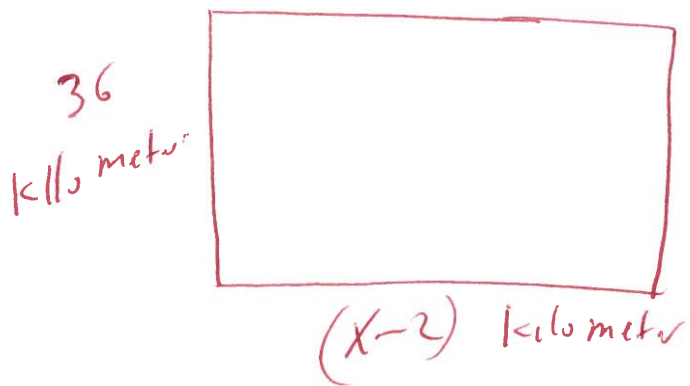
$$P = 5(-5x + 9)$$

$$P = -25x + 45 \text{ inches}$$



each side
 $-5x + 9$
inches

14) find area



$$A = LW$$

$$A = (x-2)(36)$$

$$A = 36x - 72$$

Square
kilometers

15. $A = LW$, $L = 48$ feet, $W = 34$ feet

$$A = (48)(34)$$

$$A = 1632 \text{ Square feet}$$

16. $P = 2L + 2W$, $L = 26$ feet, $W = 24$ feet

$$P = 2(26) + 2(24)$$

$$P = 52 + 48$$

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

17. $5(3x - 4) = 16x$

PEMDAS

$$15x - 20 = 16x$$

$$15x - \cancel{20} + \cancel{20} = 16x + 20$$

$$15x = 16x + 20$$

$$15x - 16x = \cancel{16x} + 20 - \cancel{16x}$$

$$-1x = 20$$

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

$$x = -20$$

$$(18) \quad -5(x+3) - 42 = 2 - 19$$

PEMDAS

$$-5x - 15 - 42 = -17$$

$$-5x - 57 = -17$$

$$-5x - \cancel{57} + \cancel{57} = -17 + 57$$

$$-5x = 40$$

$$\frac{-5x}{-5} = \frac{40}{-5}$$

$$x = -8$$

(19)

$$\frac{x}{-3} = 4^2 - |-4| - (-8)$$

PEMDAS

$$\frac{x}{-3} = (4)(4) - |-4| - (-8)$$

$$\frac{x}{-3} = 16 - (4) + 8$$

$$\frac{x}{-3} = 16 - 4 + 8$$

$$\frac{x}{-3} = 12 + 8$$

$$\frac{x}{-3} = 20$$

$$\frac{-3}{1} \left(\frac{1x}{-3} \right) = \frac{-3}{1} \left(\frac{20}{1} \right)$$

$$x = -60$$

20.

$$2x - 7 = 3x + 3$$

$$2x - \cancel{7} + \cancel{7} = 3x + 3 + 7$$

$$2x = 3x + 10$$

$$2x - 3x = 3x + 10 - 3x$$

$$-1x = 10$$

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

$$x = -10$$

21.

$$-15x - 20 = -13x + 110$$

$$-15x - \cancel{20} + \cancel{20} = -13x + 110 + 20$$

$$-15x = -13x + 130$$

$$-15x + 13x = -\cancel{13x} + 130 + \cancel{13x}$$

$$-2x = 130$$

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

$$x = -65$$

22.

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

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

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

$$3y = y$$

$$3y = 1y$$

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

$$2y = 0$$

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

$$y = 0$$

PEMDAS

23.

$$4t - 1 = 5(t+2)$$

$$4t - 1 = 5t + 10$$

$$4t - 1 - 1 = 5t + 10 + 1$$

$$4t = 5t + 11$$

$$4t - 5t = 5t + 11 - 5t$$

$$-1t = 11$$

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

$$t = -11$$

PEMDAS

$$\textcircled{24} \quad 5n + 20 = 40$$

$$5n + \cancel{20} - \cancel{20} = 40 - 20$$

$$5n = 20$$

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

$$n = 4$$

$$\textcircled{25} \quad 12 + 5t = 6(t + 2)$$

PEMDAS

$$12 + 5t = 6t + 12$$

$$\cancel{12} + 5t - \cancel{12} = 6t + \cancel{12} - \cancel{12}$$

$$5t = 6t$$

$$5t - 6t = 6t - 6t$$

$$-1t = 0$$

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

$$t = 0$$

(26)

$$-\frac{3}{4} \cdot \frac{5}{6}$$

Primos 2, 3, 5, 7, ...

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

$$\begin{array}{l} 2 \overline{) 4} \quad 2 \overline{) 6} \\ 2 \overline{) 2} \quad 3 \overline{) 3} \\ 1 \qquad 1 \end{array}$$

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

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

(27)

$$\frac{5}{12} \div \frac{11}{24} =$$

Primos 2, 3, 5, 7, ...

$$\frac{5}{12} \cdot \frac{24}{11} = \text{rewrite}$$

$$\begin{array}{l} 2 \overline{) 12} \quad 2 \overline{) 24} \\ 2 \overline{) 6} \quad 2 \overline{) 12} \\ 3 \overline{) 3} \quad 2 \overline{) 6} \\ 1 \qquad 2 \overline{) 3} \\ \qquad 1 \end{array}$$

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

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

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

28. $\frac{18x^2}{35y} \cdot \frac{42x}{25y} =$ Primes 2, 3, 5, 7, ...

$$\frac{18x^2}{35y} \cdot \frac{25y}{42x} =$$

$$\begin{array}{r} 2 \overline{) 18} \\ 3 \overline{) 9} \\ 3 \overline{) 3} \\ 1 \end{array} \quad \begin{array}{r} 5 \overline{) 35} \\ 7 \overline{) 7} \\ 1 \end{array} \quad \begin{array}{r} 2 \overline{) 42} \\ 3 \overline{) 21} \\ 7 \overline{) 7} \\ 1 \end{array} \quad \begin{array}{r} 5 \overline{) 25} \\ 5 \overline{) 5} \\ 1 \end{array}$$

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

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

$$\frac{15x}{49} =$$

29. $\frac{3}{20} + \frac{1}{20} =$ Primes

$$\frac{3+1}{20} =$$

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

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

~~$$\frac{1(2)(2)}{(2)(2)(5)} =$$~~

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

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

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

30

$$\frac{2}{5} + \frac{3}{10} =$$

Primer 2, 3, 5, 7, ...

$$\frac{2}{5} \left(\frac{2}{2} \right) + \frac{3}{10} =$$

$$2 \overline{) 10}$$

$$5 \overline{) 5}$$

1

$$\frac{4}{10} + \frac{3}{10} =$$

$$\text{LCD} = 10$$

$$\frac{4+3}{10} =$$

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

31

$$\frac{1}{4} - \frac{5}{14} =$$

Primer 2, 3, 5, 7, ...

$$\frac{1}{4} \left(\frac{7}{7} \right) - \frac{5}{14} \left(\frac{2}{2} \right) =$$

$$2 \overline{) 4}$$

$$2 \overline{) 14}$$

$$2 \overline{) 2}$$

$$7 \overline{) 7}$$

1

1

$$\frac{7}{28} - \frac{10}{28} =$$

$$4 = 2 \cdot 2$$

$$14 = 2 \cdot 7$$

$$\text{LCD} = 2 \cdot 2 \cdot 7$$

$$= 28$$

$$\frac{7-10}{28} =$$

$$\frac{-3}{28} =$$

32

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

Primes 2, 3, 5, 7

$$\begin{array}{r} 3 \overline{) 9} \\ 3 \overline{) 3} \\ 1 \end{array} \quad \begin{array}{r} 2 \overline{) 4} \\ 2 \overline{) 2} \\ 1 \end{array}$$

$$\frac{4}{5} \cdot \frac{9}{4} =$$

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

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

33

$$-18 = \frac{3x}{11}$$

Primes 2, 3, 5, 7

$$\frac{-18}{1} = \frac{3x}{11}$$

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

$$\frac{11}{3} \left(\frac{-18}{1} \right) = \frac{11}{3} \left(\frac{3x}{11} \right)$$

$$\frac{\cancel{(11)}}{\cancel{(3)}} \left(\frac{-1 \cancel{(2)} \cancel{(3)} \cancel{(3)}}{1} \right) = x$$

$$\frac{-66}{1} = x$$

$$-66 = x$$

$$\textcircled{34} \quad \frac{m}{5} + 6 = \frac{m}{3} + 4$$

$$\textcircled{\text{LCD} = 15}$$

$$\frac{m}{5} + \frac{6}{1} = \frac{m}{3} + \frac{4}{1} \quad \text{rewrite}$$

$$\frac{m}{5}(15) + \frac{6}{1}(15) = \frac{m}{3}(15) + \frac{4}{1}(15)$$

$$m(3) + 6(15) = m(5) + 4(15)$$

$$3m + 90 = 5m + 60$$

$$3m + \cancel{90} - \cancel{90} = 5m + 60 - 90$$

$$3m = 5m - 30$$

$$3m - 5m = 5m - 30 - 5m$$

$$-2m = -30$$

$$\frac{-2m}{-2} = \frac{-30}{-2}$$

$$\textcircled{m = 15}$$

$$(35) -6.297 \times 1000 =$$

$$-6297. = \text{move decimal right 3 times}$$

$$(36) \frac{57.037}{100} =$$

$$0.57037 = \text{move decimal left 2 times}$$

$$(37) 4.5x - 52 = 2.5x + 8$$

$$4.5x - \cancel{52} + \cancel{52} = 2.5x + 8 + 52$$

$$4.5x = 2.5x + 60$$

$$4.5x - 2.5x = \cancel{2.5x} + 60 - \cancel{2.5x}$$

$$2x = 60$$

$$\frac{2x}{2} = \frac{60}{2}$$

$$x = 30$$

$$38 \quad \frac{13}{78} = \frac{23}{x}$$

$$13(x) = 78(23) \quad \text{Cross Mult}$$

$$13x = 1794$$

$$\frac{13x}{13} = \frac{1794}{13}$$

$$x = 138$$

39. Write the fraction as a percent

$$\frac{7}{10}$$

$$\frac{7}{10} = \frac{x}{100}$$

$$7(100) = 10(x) \quad \text{Cross Mult}$$

$$700 = 10x$$

$$\frac{700}{10} = \frac{10x}{10}$$

$$70 = x$$

OR

$$70\%$$

40) 28% written as a decimal

$$.28 =$$

28% written as a fraction simplified

$$\frac{28}{100}$$

Primes 2, 3, 5, 7 --

$$2 \overline{) 28}$$

$$2 \overline{) 14}$$

$$7 \overline{) 7}$$

1

$$2 \overline{) 100}$$

$$2 \overline{) 50}$$

$$5 \overline{) 25}$$

$$5 \overline{) 5}$$

1

$$\frac{(2)(2)(7)}{(2)(2)(5)(5)} =$$

$$\frac{\cancel{2}(\cancel{2})(7)}{\cancel{2}(\cancel{2})(5)(5)} =$$

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

41) find perimeter

$$P = 7 + 9 + 11$$

$$P = 27 \text{ inches}$$



42

$$A = \pi r^2$$

$$A = \pi (3.5)^2$$

$$A = \pi (3.5)(3.5)$$

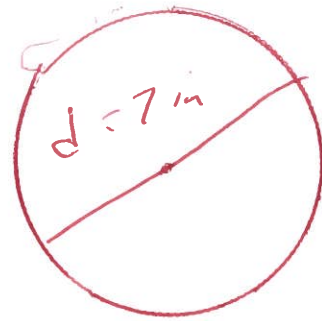
$$A = \pi (12.25)$$

$$A = 12.25\pi$$

Square
inches

PEMDAS

Exact



$$r = \frac{1}{2}d = \frac{1}{2}(7) = \frac{7}{2} = 3\frac{1}{2} = 3.5$$

$$A = \pi r^2, \quad \pi = 3.14, \quad r = 3.5$$

$$A = 3.14 (3.5)^2$$

$$A = 3.14 (3.5)(3.5)$$

$$A = 3.14 (12.25)$$

$$A = 38.465$$

Square
inches

PEMDAS

Approx

$$\begin{array}{r} 3\frac{1}{2} \\ 2\overline{)7} \\ \underline{-(6)} \\ 1 \end{array}$$

PEMDAS

43

$$3(x-7) - 5 = -26$$

$$3x - 21 - 5 = -26$$

$$3x - 26 = -26$$

$$3x - \cancel{26} + \cancel{26} = -26 + 26$$

$$3x = 0$$

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

$$x = 0$$

44. $x + y = 6$ $y =$

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

$$y = 6 - x$$

$$y = -x + 6$$

45. $A = B + Bcd$ $c =$

$$A - B = B + Bcd - B$$

$$A - B = Bcd$$

$$\frac{A - B}{Bd} = \frac{Bcd}{Bd}$$

$$\frac{A - B}{Bd} = c$$

46. $-4x \leq 16$

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

$$x \geq -4$$



$$[-4, \infty)$$

47) $y = -2x + 6$

$y = -2(0) + 6$

$y = 0 + 6$

$y = 6$

$y = -2(1) + 6$

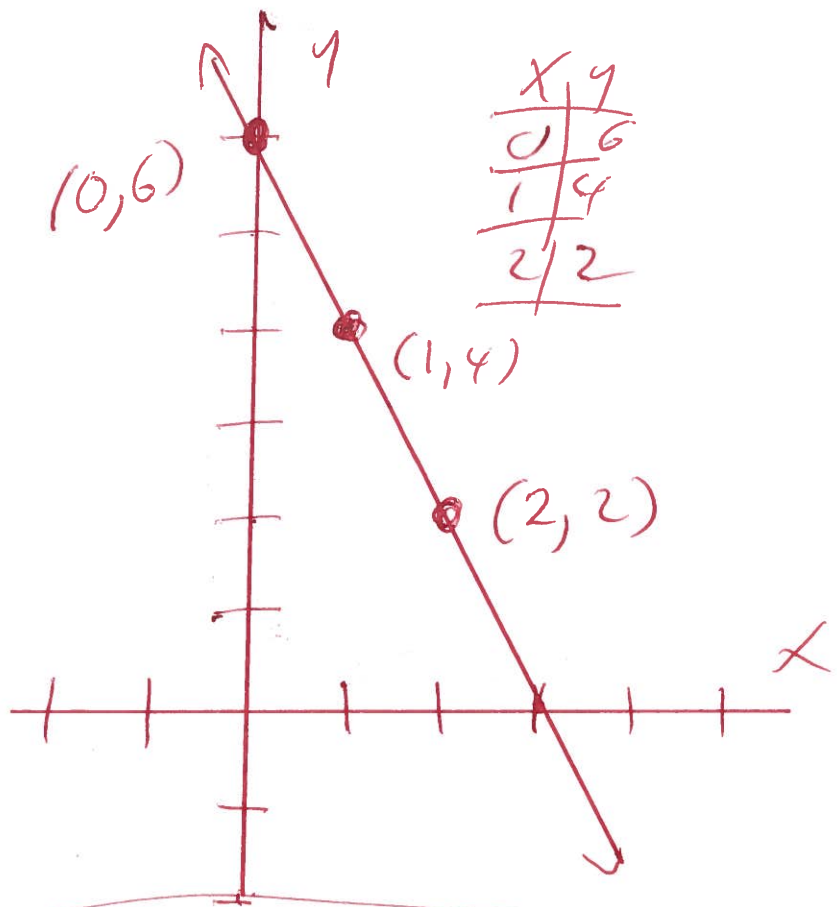
$y = -2 + 6$

$y = 4$

$y = -2(2) + 6$

$y = -4 + 6$

$y = 2$

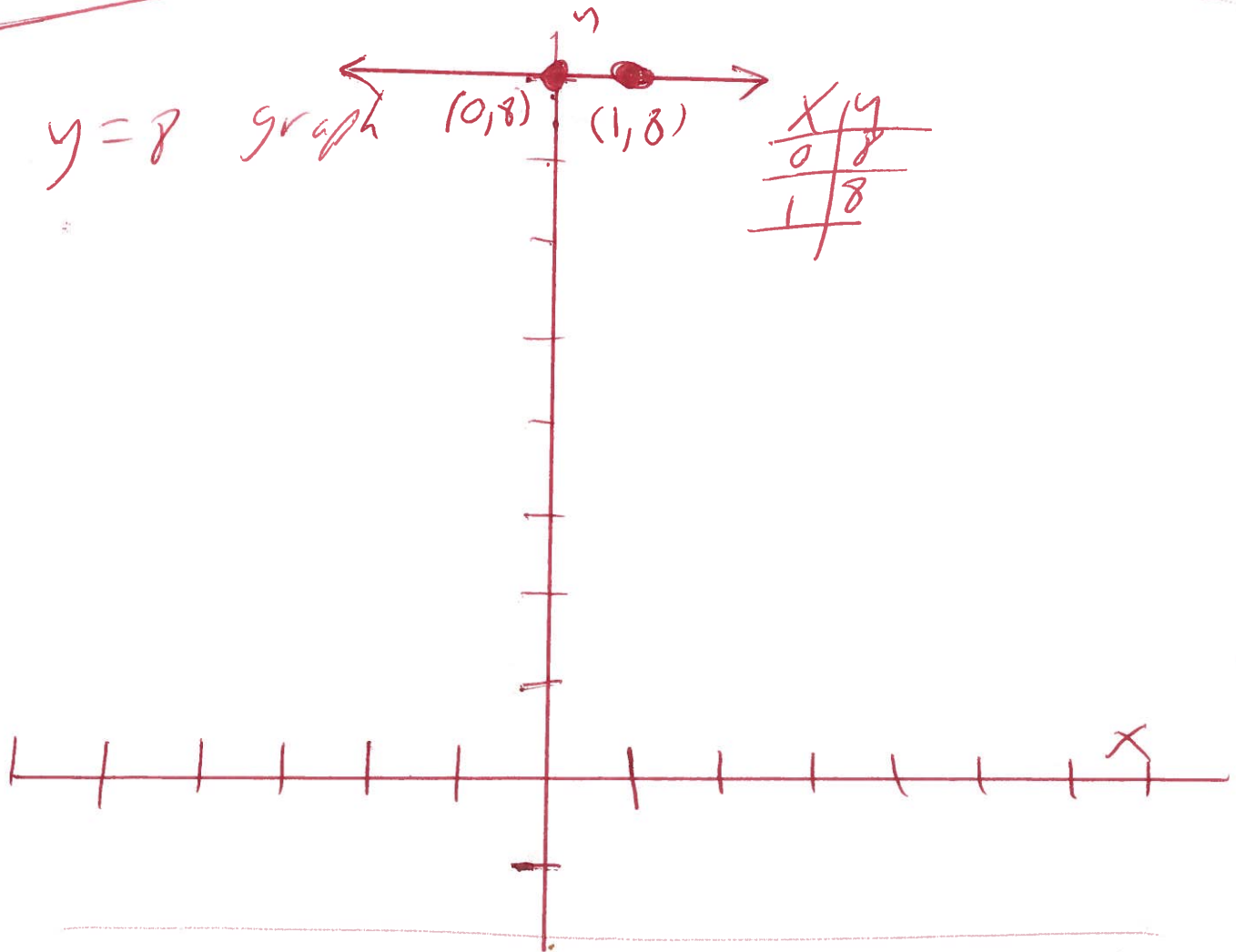


48) $y = 8$ graph

(0, 8)

(1, 8)

x	y
0	8
1	8



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

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

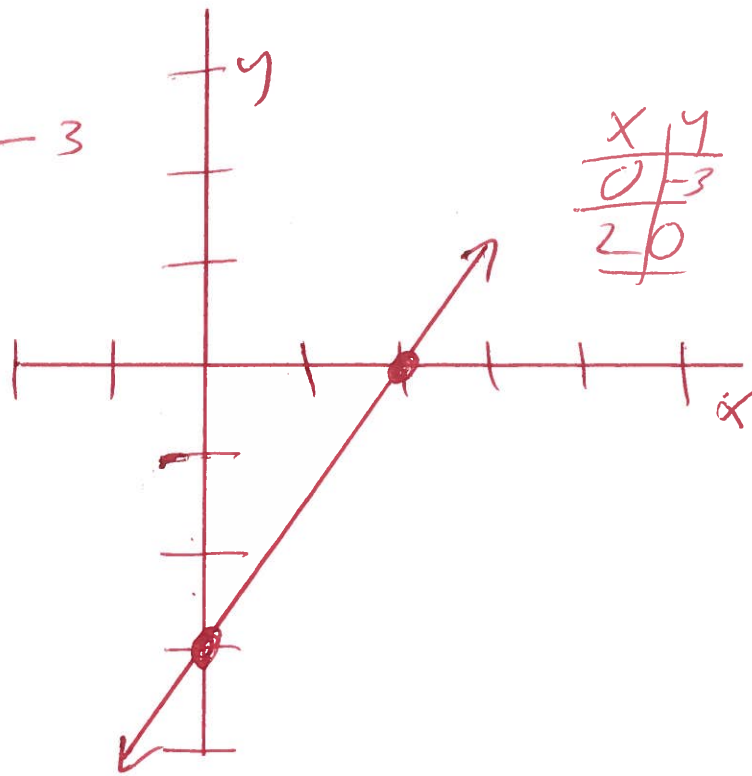
$y = 0 - 3$

$y = -3$

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

$y = 3 - 3$

$y = 0$



50. $6x - 3y = -6$

find x-intercept let $y = 0$

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

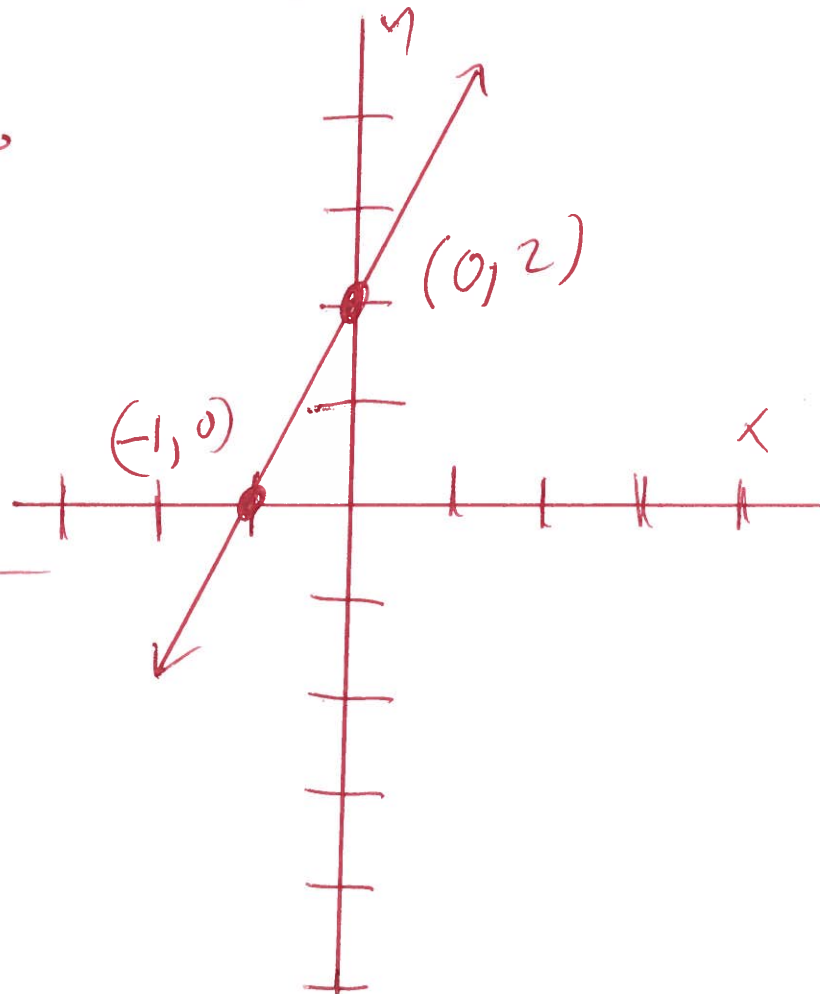
$6x - 0 = -6$

$6x = -6$

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

$x = -1$

$(-1, 0)$



$6x - 3y = -6$

find y-intercept let $x = 0$

$6(0) - 3y = -6$

$0 - 3y = -6$

$-3y = -6$

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

$y = 2$

$(0, 2)$

Another method

(50) $6x - 3y = -6$

$$\cancel{6x} - 3y - \cancel{6x} = -6 - 6x$$

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

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

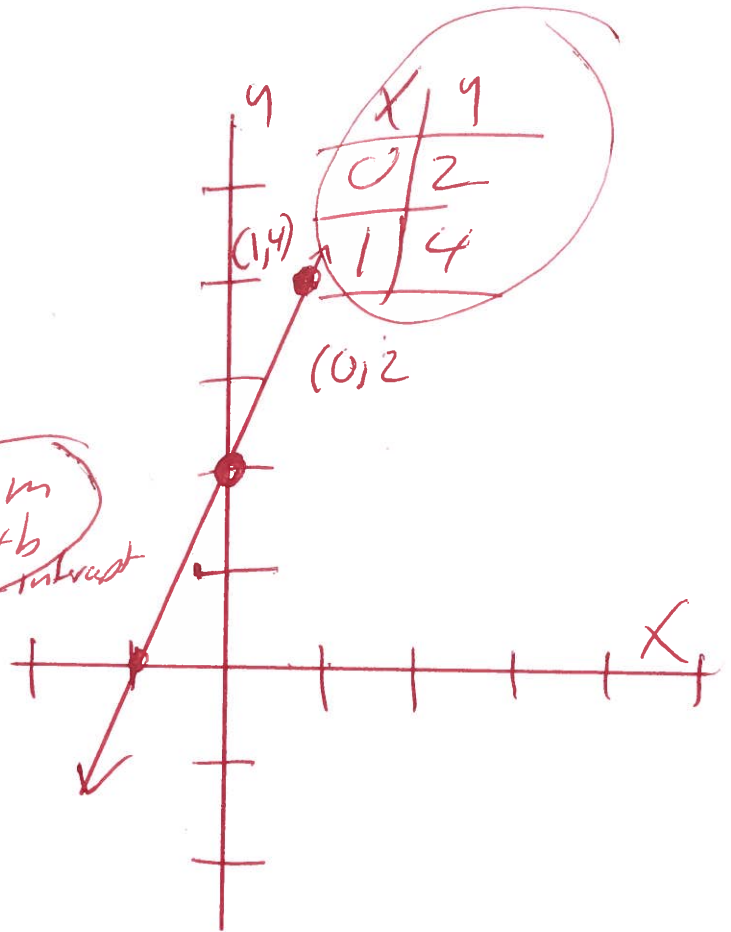
$$y = 2 + 2x$$

$$y = 2x + 2$$

form
 $y = mx + b$
slope = intercept

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

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



(51) $(5, -6)$ and $(-6, -5)$ find slope
 $x_1 \quad y_1 \quad x_2 \quad y_2$

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

$$m = \frac{(-6) - (-5)}{(5) - (-6)}$$

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

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

(52) $y = 5x + 1$ find slope formula
 $y = mx + b$
 Slope = m y-intercept = b

$Slope = m = 5$ $y\text{-intercept} = 1$

(53) $8x + y = 6$ find slope formula
 $8x + y - 8x = 6 - 8x$
 $y = 6 - 8x$
 $y = -8x + 6$
 $y = mx + b$
 Slope = m $y\text{-intercept} = b$

$Slope = m = -8$ $y\text{-intercept} = 6$

(54) $7x - 9y = 63$ find slope formula
 $7x - 9y - 7x = 63 - 7x$
 $-9y = 63 - 7x$
 $\frac{-9y}{-9} = \frac{63}{-9} - \frac{7x}{-9}$
 $y = -7 + \frac{7}{9}x$
 $y = \frac{7}{9}x - 7$
 $y = mx + b$
 Slope = m $y\text{-intercept} = b$

$Slope = m = \left(\frac{7}{9}\right)$ $y\text{-intercept} = -7$

55. $m = 2$ at point $= (-4, 9)$
 x_1, y_1

find equation of the line

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

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

PEMDAS

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

$$y - 9 = 2x + 8$$

$$y - 9 + 9 = 2x + 8 + 9$$

$$y = 2x + 17$$

56. $x^2 - 6x + 3, x = -2$

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

PEMDAS

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

$$4 + 12 + 3 =$$

$$16 + 3 =$$

$$19 =$$

57

$$x + 2y = 0$$

$$3x + 5y = -3$$

$$\begin{pmatrix} x + 2y = 0 \\ 3x + 5y = -3 \end{pmatrix} \begin{pmatrix} -5 \\ 2 \end{pmatrix}$$

$$-5x - 10y = 0$$

$$6x + 10y = -6$$

$$x + 0 = -6$$

$$x = -6$$

Subst

$$x + 2y = 0$$

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

$$-6 + 2y = 0$$

$$-6 + 2y + 6 = 0 + 6$$

$$2y = 6$$

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

$$y = 3$$

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

$$(58) (-2y^1 z^3)(3y^4 z^6) =$$

$$(-2y^1 z^3)(3y^4 z^6) =$$

$$-6y^{1+4} z^{3+6} =$$

$$-6y^5 z^9 =$$

add powers

$$(59) (5z^{10})(-2z^7)(z^3) =$$

$$(5z^{10})(-2z^7)(1z^3) =$$

$$-10z^{10+7+3} =$$

add powers

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

$$(60) (X^2)^7 =$$

mult powers

$$X^{(2)(7)} =$$

$$X^{14} =$$

61

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

$$(4^1 y^9)^2 =$$

$$4^{1(2)} y^{9(2)} =$$

$$4^2 y^{18} =$$

$$(4)(4) y^{18} =$$

$$16 y^{18} =$$

mult powers

62

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

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

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

$$(-5)^2 a^{10} b^{12} c^2 =$$

$$(-5)(-5) a^{10} b^{12} c^2 =$$

$$25 a^{10} b^{12} c^2 =$$

mult powers

$$\textcircled{63} \left(\frac{2x^3z^2}{y^4} \right)^4 =$$

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

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

$$\frac{2^4 x^{12} z^8}{y^{16}} =$$

$$\frac{(2)(2)(2)(2) x^{12} z^8}{y^{16}} =$$

$$\frac{16 x^{12} z^8}{y^{16}} =$$

mult powers

64

$$C^2 C^5 C^6 =$$

$$2+5+6$$

$$C =$$

$$C^{13} =$$

add powers

65

$$\frac{6x^4 y^2 z}{x^2 y z} =$$

$$\frac{6x^4 y^2 z^1}{x^2 y^1 z^1} =$$

$$6x^{4-2} y^{2-1} =$$

$$6x^2 y^1 =$$

Subtract powers

$$6x^2 y =$$

66

$$P(x) = x^2 + x + 3, \quad P(8)$$

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

$$P(8) = (8)(8) + (8) + 3$$

$$P(8) = 64 + 8 + 3$$

$$P(8) = 72 + 3$$

$$P(8) = 75$$

PEMDAS

$$(67) \quad 4a^2 - 2ab + 8b^2 - 3a^2 - 4ab + 8b^2 =$$

$$1a^2 - 6ab + 16b^2 =$$

$$a^2 - 6ab + 16b^2 =$$

$$(68) \quad (8y^2 + 4y - 9) - (-8y + 7) =$$

$$8y^2 + 4y - 9 + 8y - 7 =$$

$$8y^2 + 12y - 16 =$$

PEMDAS

$$(69) \quad (-3y^2 - 6y) + (6y^2 + 2y - 5) =$$

$$-3y^2 - 6y + 6y^2 + 2y - 5 =$$

$$3y^2 - 4y - 5 =$$

PEMDAS

$$(70) \quad (x+3)(x^3 - 2x + 4) =$$

$$x^4 - 2x^2 + 4x + 3x^3 - 6x + 12 =$$

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

PEMDAS

71.

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

$$-4x^3 - 8x^2 + 12x =$$

PEMDAS

72.

find area

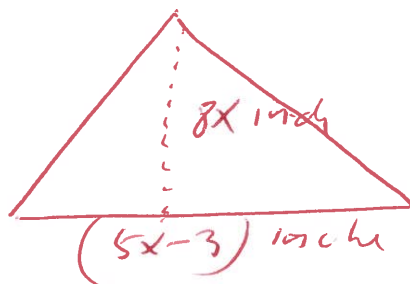
$$A = \frac{1}{2}BH$$

$$A = \frac{1}{2}(5x-3)(8x)$$

$$A = \frac{1}{2}(40x^2 - 24x)$$

$$A = \frac{1}{2}(40x^2) - \frac{1}{2}(24x)$$

$$A = 20x^2 - 12x \quad \text{Square inches}$$



PEMDAS

73.

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

PEMDAS

$$2(3y^2 - y - 21y + 7) =$$

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

$$6y^2 - 44y + 14 =$$

74

$$(a-3)(a+3) =$$

$$a^2 + 3a - 3a - 9 =$$

PEMDAS

$$a^2 - 9 =$$

75

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

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

PEMDAS

$$16c^2 - 20cd - 20cd + 25d^2 =$$

$$16c^2 - 40cd + 25d^2 =$$

76

$$5^{-2} =$$

$$\frac{1}{5^2} = \text{rewrite}$$

$$\frac{1}{(5)(5)}$$

$$\frac{1}{25} =$$

$$\textcircled{77} \left(\frac{1}{4}\right)^{-2} =$$

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

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

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

multiply powers

$$2^4 =$$

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

$$16 =$$

$$\textcircled{78} \frac{m^{-3}}{m^{-7}} =$$

$$\frac{m^7}{m^3} = \text{rewrite}$$

$$m^{7-3} =$$

subtract powers

$$m^4 =$$

79. $(-5x^4 y^{-4})(4x^{-1} y^2) =$

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

$$-20x^3 y^{-2} =$$

$$\frac{-20x^3}{y^2} =$$

rewrite

80. $(a^{-9} b^8)^{-5} =$

$$a^{-9(-5)} b^{8(-5)} =$$

mult powers

$$a^{45} b^{-40} =$$

$$\frac{a^{45}}{b^{40}} =$$

rewrite

81. Write the number in scientific notation
48,000 =

$$4.8 \times 10^4 =$$

82. Write the number in scientific notation
0.00000143 =

$$1.43 \times 10^{-6} =$$

83. 8, 12 find GCF
Primes 2, 3, 5, 7

$$\begin{aligned} \text{GCF} &= 2 \cdot 2 \\ &= 4 \end{aligned}$$

$$\begin{array}{r} 2 \overline{) 8} \\ 2 \overline{) 4} \\ 2 \overline{) 2} \\ \hline 1 \end{array} \quad \begin{array}{r} 2 \overline{) 12} \\ 2 \overline{) 6} \\ 3 \overline{) 3} \\ \hline 1 \end{array}$$

$$\begin{array}{r} 8 = 2 \cdot 2 \cdot 2 \\ 12 = 2 \cdot 2 \cdot 3 \\ \hline \text{LCD} = 2 \cdot 2 \cdot 3 \\ = 12 \end{array}$$

84 $6x + 30 = \text{factor}$

$6(x+5) =$

85 $4xy - 18x^2 = \text{factor}$

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

86 $-18x^4y^7 - 63x^5y^4 = \text{factor}$

$9x^4y^4(-2y^3 - 7x) =$

87 $x^2 - x - 42 = \text{factor}$

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

ck

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

$x^2 - 7x + 6x - 42 =$

$x^2 - 1x - 42 =$

$x^2 - x - 42 = \text{Good}$

- Possible
- 42 · 1
 - 21 · 2
 - 6 · 7
 - 14 · 3



88) $121x^2 - 225y^2 = \text{factor}$

$$(11x)^2 - (15y)^2 =$$

$$(11x + 15y)(11x - 15y) =$$

SOLVE

89) $3x(x-6) = 0$

wt $3x = 0$ OR $x - 6 = 0$

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

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

OR $x = 6$

$$x = 0$$

SOLVE

90) $(3x+7)(7x-9) = 0$

wt $3x+7 = 0$ OR $7x-9 = 0$

$3x + x - x = 0 - 7$ OR $7x - 9 + 9 = 0 + 9$

$3x = -7$ OR $7x = 9$

$\frac{3x}{3} = \frac{-7}{3}$ OR $\frac{7x}{7} = \frac{9}{7}$

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

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

91. SOLVE
 $x^2 - 11x + 28 = 0$

28.1 Possible
14.2
4.7

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

Let $x-4=0$ or $x-7=0$

$$x-4+4=0+4 \quad \text{OR} \quad x-7+7=0+7$$

$x=4$ OR $x=7$

SOLVE

92. $x^2 + 7x - 18 = 0$

18.1 Possible
9.2
6.3

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

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

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

$x=2$ OR $x=-9$

93

SOLVE

$$x^3 - 12x^2 + 35x = 0$$

$$x(x^2 - 12x + 35) = 0$$

$$x(x-5)(x-7) = 0$$

$$\text{let } x=0 \text{ OR } x-5=0 \text{ OR } x-7=0$$

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

$$x=5$$

$$\text{OR } x=7$$

35.1
7.5
Possible

94

Simplify

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

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

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

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

12.1
6.2
3.4
Possible

95

$$\frac{x^2 - 9}{x^2 - 2x - 3}$$

Simplif

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

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

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

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

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

$\frac{x+3}{x}$
Simplified

96

$$\frac{4m}{3n} + \frac{8m}{3n} =$$

Prime 2, 3, 5, 7...

$$\frac{4m + 8m}{3n} =$$

$$\begin{matrix} 2(12) \\ 2(6) \\ 3(3) \\ 1 \end{matrix}$$

$$\frac{12m}{3n} =$$

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

$\frac{4m}{n}$

97

Simplif.

$$\frac{11x-10}{x^2-10x+16} - \frac{10x-2}{x^2-10x+16} =$$

$$\frac{(11x-10) - (10x-2)}{x^2-10x+16} =$$

$$\frac{11x-10-10x+2}{x^2-10x+16} =$$

$$\frac{x-8}{x^2-10x+16} =$$

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

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

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

1611
8.2
44

98

$$\frac{z-5}{2} = \frac{z}{7}$$

Solve

$$7(z-5) = 2(z) \quad \text{Cross Mult}$$

$$7z - 35 = 2z$$

$$7z - 35 + 35 = 2z + 35$$

$$7z = 2z + 35$$

$$7z - 2z = 2z + 35 - 2z$$

$$5z = 35$$

$$\frac{5z}{5} = \frac{35}{5}$$

$$z = 7$$

Simplify

99

$$\sqrt{81x^6} =$$

$$\sqrt[2]{81x^6} =$$

$$\sqrt[2]{9^2x^6} =$$

$$9^{\frac{2}{2}}x^{\frac{6}{2}} =$$

$$9^1x^3 =$$

$$9x^3 =$$

Prime 2, 3, 5, 7...

$$\begin{array}{r} 3 \overline{) 81} \\ 3 \overline{) 27} \end{array}$$

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

divide powers

160

$$\sqrt[3]{27} =$$

Simplify
Prime 2, 3, 5, 7

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

$$\begin{array}{r}
 3 \overline{) 27} \\
 \underline{3 9} \\
 3 \overline{) 3} \\
 \underline{3} \\
 1
 \end{array}$$

$$3^{3/3} = \text{Divide powers}$$

$$3^1 =$$

$$3 =$$

Simplify

161

$$\sqrt{\frac{16}{25}} =$$

$$\frac{\sqrt{16}}{\sqrt{25}} = \text{rewrite}$$

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

(102)

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

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

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

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

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

$$3^{-1} =$$

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

mult powers

rewrite

Prime 2, 3, 5, 7, ...

$$\begin{array}{r} 3 \overline{) 81} \\ \underline{3 27} \\ 3 \underline{9} \\ 3 \underline{3} \\ 1 \end{array}$$

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

103

$$1024 = 2^{10}$$

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

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

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

$$2^{\frac{20}{5}} =$$

$$2^4 =$$

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

16 =

Simplify

104

$$\sqrt{24} =$$

Prime 2, 3, 5, 7, ...

$$\sqrt{4 \cdot 6} = \text{rewrite}$$

$$\sqrt{4} \sqrt{6} =$$

2\sqrt{6} =

$$\begin{array}{r}
 2 \overline{)1024} \\
 \underline{2048} \\
 2512 \\
 \underline{2056} \\
 456 \\
 \underline{4128} \\
 48 \\
 \underline{464} \\
 16 \\
 \underline{16} \\
 0 \\
 1
 \end{array}$$

$$\begin{array}{r}
 2 \overline{)24} \\
 \underline{48} \\
 12 \\
 \underline{12} \\
 0 \\
 3 \overline{)6} \\
 \underline{6} \\
 0 \\
 1
 \end{array}$$

105.

$$\sqrt{x-17} = 7$$

$$(\sqrt{x-17})^2 = (7)^2$$

$$x-17 = 49$$

$$x - \cancel{17} + \cancel{17} = 49 + 17$$

$$x = 66$$

SOLVE

ck

$$\sqrt{66-17} = 7$$

$$\sqrt{49} = 7$$

$$7 = 7$$

Good

106.

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

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

$$x+2 = 2x-5$$

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

$$x = 2x - 7$$

$$1x - 2x = 2x - 7 - 2x$$

$$-1x = -7$$

$$-1x = -7$$

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

$$x = 7$$

SOLVE

square Both sides

ck

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

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

$$\sqrt{9} = \sqrt{14-5}$$

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

$$3 = 3$$

Good

$$(107) \quad (x+5)^2 = 36$$

SOLVE

$$\sqrt{(x+5)^2} = \pm\sqrt{36}$$

$$x+5 = \pm 6$$

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

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

$$x = -11$$

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

ck

$$(x+5)^2 = 36$$

$$(-11+5)^2 = 36$$

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

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

$$36 = 36 \quad \checkmark$$

Good

$$(x+5)^2 = 36$$

$$(1+5)^2 = 36$$

$$(6)^2 = 36$$

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

$$36 = 36 \quad \checkmark$$

Good

(108) $m^2 - 5m + 4 = 0$ SOLVE (4.1) Possible
22

$$(m-1)(m-4) = 0$$

$$\text{or } m-1=0 \text{ OR } m-4=0$$

$$m-1+1=0+1 \text{ OR } m-4+4=0+4$$

$$m=1 \text{ OR } m=4$$

OR use Quadr formula

$$1m^2 - 5m + 4 = 0$$

$$a=1, b=-5, c=4$$

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

$$m = \frac{-(-5) \pm \sqrt{(-5)^2 - 4(1)(4)}}{2(1)}$$

$$m = \frac{5 \pm \sqrt{25 - 16}}{2}$$

$$m = \frac{5 \pm \sqrt{9}}{2}$$

$$m = \frac{5 \pm 3}{2}$$

$$m = \frac{5-3}{2} \text{ OR } m = \frac{5+3}{2}$$

$$m = \frac{2}{2} \text{ OR } m = \frac{8}{2}$$

$$m=1 \text{ OR } m=4$$

109 $m^2 - 3m - 4 = 0$ SOLVE (4.1
2.2)

$$(m+1)(m-4) = 0$$

Let $m+1=0$ OR $m-4=0$

$$m+1-1=0-1 \text{ OR } m-4+4=0+4$$

$$m = -1 \text{ OR } m = 4$$

OR use Quad form

$$1m^2 - 3m - 4 = 0$$

$$a=1, b=-3, c=-4$$

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

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

$$m = \frac{3 \pm \sqrt{9+16}}{2}$$

$$m = \frac{3 \pm \sqrt{25}}{2}$$

$$m = \frac{3 \pm 5}{2}$$

$$m = \frac{3-5}{2} \text{ OR } m = \frac{3+5}{2}$$

$$m = -\frac{2}{2} \text{ OR } m = \frac{8}{2}$$

$$m = -1 \text{ OR } m = 4$$

$$(110) \quad y = 5y^2 - 4$$

$$0 = 5y^2 - 4 - y$$

$$0 = 5y^2 - y - 4$$

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

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

$$5y + 4 - 4 = 0 - y$$

$$5y = -4$$

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

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

$$\text{OR} \quad y = 1$$

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

OR use Quad form

$$5y^2 - y - 4 = 0$$

$$a = 5, \quad b = -1, \quad c = -4$$

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

$$y = \frac{-(-1) \pm \sqrt{(-1)^2 - 4(5)(-4)}}{2(5)}$$

$$y = \frac{1 \pm \sqrt{1 + 80}}{10}$$

$$y = \frac{1 \pm \sqrt{81}}{10}$$

$$y = \frac{1 \pm 9}{10}$$

$$y = \frac{1 - 9}{10} \quad \text{OR} \quad y = \frac{1 + 9}{10}$$

$$y = -\frac{8}{10} \quad \text{OR} \quad y = \frac{10}{10}$$

Solve

Possible

$$\begin{array}{|c|c|} \hline 5.1 & 4.1 \\ \hline \hline & 22 \\ \hline \hline \end{array}$$

$$y = \frac{-(-4)}{2(5)} \quad \text{OR} \quad y = \frac{10}{10}$$

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

$$\text{OR} \quad y = 1$$

$$(111) \quad x^2 + 6x + 25 = 0$$

$$x^2 + 6x + 25 = 0$$

$$a=1, b=6, c=25$$

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

$$x = \frac{-(6) \pm \sqrt{(6)^2 - 4(1)(25)}}{2(1)}$$

$$x = \frac{-6 \pm \sqrt{36 - 100}}{2}$$

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

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

$$x = -3 \pm 4i$$

$$x = -3 - 4i$$

OR

$$x = -3 + 4i$$

Solve

formule

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

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

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

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