

1

$$0 > -4$$

Math 04/08/ Aleks Step

07/8/8

dum dum
dum dum

2

$$|-16| =$$

$$(16) =$$

$$16 =$$

3

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

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

$$10 + 8 =$$

$$18 =$$

4

$$-8^2 =$$

$$-(8)(8) =$$

$$-(64) =$$

$$-64 =$$

$$5. (-8) + 8 \div 4 =$$

PEMDAS

2

$$(-8) + 2 =$$

$$-8 + 2 =$$

$$\underline{-6 =}$$

$$6. 3 + 5 \cdot 2 - 14 =$$

PEMDAS

$$3 + 10 - 14 =$$

$$13 - 14 =$$

$$\underline{-1 =}$$

$$7. |6 - 46| \div 2 =$$

PEMDAS

$$|-40| \div 2 =$$

$$(40) \div 2 =$$

$$\underline{20 =}$$

$$8. (-12 - 16) \div 14 - 26 =$$

PEMDAS

$$(-28) \div 14 - 26 =$$

$$-2 - 26 =$$

$$\underline{-28 =}$$

9. $3(-11) \div [5(-3) - 7(-2)] =$ PEMDAS 3

$$3(-11) \div [-15 + 14] =$$

$$3(-11) \div [-1] =$$

$$-33 \div [-1] =$$

$$33 =$$

10. $4x - 3y - 12z$, $x = -3$, $y = 2$, $z = -1$

$$4(-3) - 3(2) - 12(-1) =$$
 PEMDAS

$$-12 - 6 + 12 =$$

$$-18 + 12 =$$

$$-6 =$$

11. $d - 9 = -3$

$$d - 9 + 9 = -3 + 9$$

$$d = 6$$

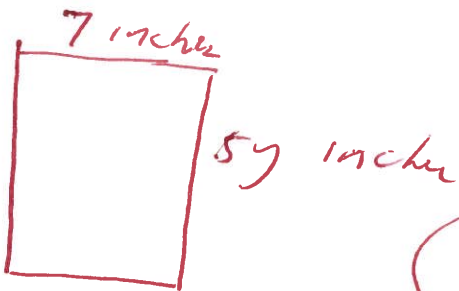
$$\textcircled{12} \quad -4(9p+7) =$$
$$-36p - 28 =$$

PEMDAS 4

$$\textcircled{13} \quad 6y - 2(y-2) + 4 =$$
$$6y - 2y + 4 + 4 =$$
$$4y + 8 =$$

PEMDAS

$\textcircled{14}$ find area



$$A = LW$$

$$A = (5y)(7)$$

$$A = 35y \text{ Square inches}$$

$$\textcircled{15} \quad P = 2L + 2W, \quad L = 30^{\text{feet}}, \quad W = 24^{\text{feet}}$$

$$P = 2(30) + 2(24)$$

$$P = 60 + 48$$

$$P = 108 \text{ feet}$$

16

$$20 = t + 4t$$

$$20 = 1t + 4t$$

$$20 = 5t$$

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

$$4 = t$$

5

17

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

PEMDAS

$$4x - 8 = 5x$$

$$4x - \cancel{8} + \cancel{8} = 5x + 8$$

$$4x = 5x + 8$$

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

$$-1x = 8$$

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

$$x = -8$$

PEMDAS

$$(18) \quad 5(y-2) = 2y-10$$

$$5y - 10 = 2y - 10$$

$$5y - \cancel{10} + \cancel{10} = 2y - \cancel{10} + \cancel{10}$$

$$5y = 2y$$

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

$$3y = 0$$

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

$$y = 0$$

(19)

$$\frac{4}{7} = \frac{5}{14} =$$

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

$$\frac{4}{7} \cdot \frac{14}{5} = \text{rewrite}$$

$$\begin{array}{r} 2 \overline{)4} \quad 2 \overline{)14} \\ \underline{2} \quad \underline{14} \\ 1 \quad 1 \end{array}$$

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

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

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

20. $\frac{1}{2} + \frac{1}{4} =$ LCD = 4 Prime 2, 3, 5, 7...

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

$$\frac{2}{4} + \frac{1}{4} =$$

$$\frac{2+1}{4} =$$

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

$2 \overline{) 2}$
 1
 $2 \overline{) 4}$
 2
 $2 = 2$
 $4 = 2 \cdot 2$

 $\text{LCD} = 2 \cdot 2$
 $= 4$

21. $\frac{1}{4} - \frac{5}{18} =$ Prime 2, 3, 5, 7...

$$\frac{1}{4} \left(\frac{9}{9} \right) - \frac{5}{18} \left(\frac{2}{2} \right) =$$

$$\frac{9}{36} - \frac{10}{36} =$$

$$\frac{9-10}{36} =$$

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

$2 \overline{) 4}$
 2
 1
 $2 \overline{) 18}$
 $3 \overline{) 9}$
 3
 $4 = 2 \cdot 2$
 $18 = 2 \cdot 3 \cdot 3$

 $\text{LCD} = 2 \cdot 2 \cdot 3 \cdot 3$
 $= 36$

22

$$\frac{\frac{5}{8}}{\frac{5}{9}} =$$

$$\frac{5}{8} \cdot \frac{9}{5} = \text{rewrite}$$

$$\cancel{\frac{5}{8}} \cdot \cancel{\frac{9}{5}} =$$

$$\frac{9}{8} =$$

23

$$-15 = \frac{3}{11}x$$

$$\frac{11}{3} \left(\frac{-15}{1} \right) = \left(\frac{11}{3} \right) \left(\frac{3}{11}x \right) \quad \text{mult}$$

$$\frac{11}{3} \left(\frac{-1(3)(5)}{1} \right) = x$$

$$\frac{11}{3} \left(\frac{-1(\cancel{3})(5)}{1} \right) = x$$

$$11(-1(5)) = x$$

$$-55 = x$$

24.

$$\frac{m}{6} + 5 = \frac{m}{5} + 4$$

$$LCD = 30$$

9

$$\frac{m}{6} + \frac{5}{1} = \frac{m}{5} + \frac{4}{1}$$

$$\frac{m}{6}(30) + \frac{5}{1}(30) = \frac{m}{5}(30) + \frac{4}{1}(30) \quad \text{mult}$$

$$m(5) + 5(30) = m(6) + 4(30) \quad \text{divide}$$

$$5m + 150 = 6m + 120$$

$$5m + 150 - 150 = 6m + (120 - 150)$$

$$5m = 6m - 30$$

$$5m - 6m = 6m - 30 - 6m$$

$$-1m = -30$$

$$\frac{-1m}{-1} = \frac{-30}{-1}$$

$$m = 30$$

$$m = 30$$

25.

$$2.2x - 83 = 1.2x + 2$$

$$2.2x - \cancel{83} + \cancel{83} = 1.2x + 2 + 83$$

$$2.2x = 1.2x + 85$$

$$2.2x - 1.2x = \cancel{1.2x} + 85 - \cancel{1.2x}$$

$$1x = 85$$

$$x = 85$$

26.

$$\frac{7}{8} = \frac{x}{24}$$

$$7(24) = 8(x) \quad \text{Cross mult}$$

$$168 = 8x$$

$$\frac{168}{8} = \frac{\cancel{8}x}{\cancel{8}}$$

$$21 = x$$

27

$$\frac{15}{150} = \frac{23}{x}$$

$$15(x) = 150(23) \quad \text{cross mult}$$

$$15x = 3450$$

$$\frac{15x}{15} = \frac{3450}{15}$$

$$x = 230$$

28

Write the fraction as a Percent

$$\frac{1}{10}$$

$$\frac{1}{10} = \frac{x}{100}$$

$$1(100) = 10(x) \quad \text{cross mult}$$

$$100 = 10x$$

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

$$10 = x$$

OR

$$10\%$$

29

36% write as a decimal

12

0.36 =

36% write as a fraction (simplified)

36/100 =

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

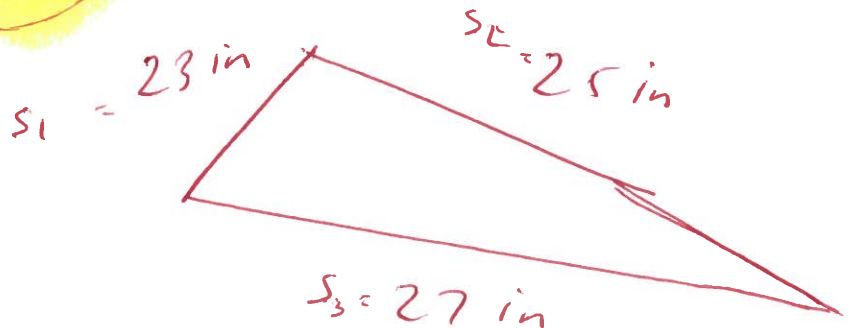
(2)(2)(3)(3) / (2)(2)(5)(5) = (2)(2)(3)(3) / (2)(2)(5)(5) =

2(36) 2(100)
2(18) 2(50)
3(9) 5(25)
3(3) 5(5)
1 1

9/25 =

30

find perimeter



P = s1 + s2 + s3

P = 23 + 25 + 27

P = 48 + 27

P = 75 inches

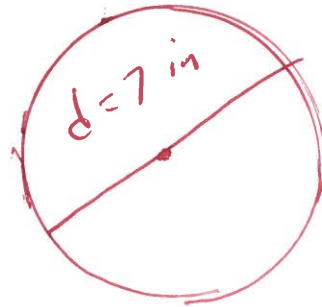
31) find area
 $A = \pi r^2$

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

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

$$A = \pi (12.25)$$

$A = 12.25\pi$ exact area
square inches



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

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

$= 3.5$

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

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

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

$$A = 3.14 (12.25)$$

$A = 38.465$ square inches approx

32

$$9(x+5) + 5 = 50$$

$$9x + 45 + 5 = 50$$

$$9x + 50 = 50$$

$$9x + \cancel{50} - \cancel{50} = 50 - 50$$

$$9x = 0$$

$$\frac{\cancel{9}x}{\cancel{9}} = \frac{0}{9}$$

$$x = 0$$

33

$$3x + y = 10$$

$$y =$$

$$\cancel{3x} + y - \cancel{3x} = 10 - 3x$$

$$y = 10 - 3x$$

OR

$$y = -3x + 10$$

34

$$A = B + Bcd$$

$$C =$$

$$A - B = \cancel{B} + Bcd - \cancel{B}$$

$$A - B = Bcd$$

$$\frac{A - B}{Bd} = \frac{\cancel{B}cd}{\cancel{B}}$$

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

35. $-8x \leq 24$

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

$x \geq -3$



$[-3, \infty)$

36. $y = -4x + 3$ graph

$y = -4(0) + 3$

$y = 0 + 3$

$y = 3$

$y = -4(1) + 3$

$y = -4 + 3$

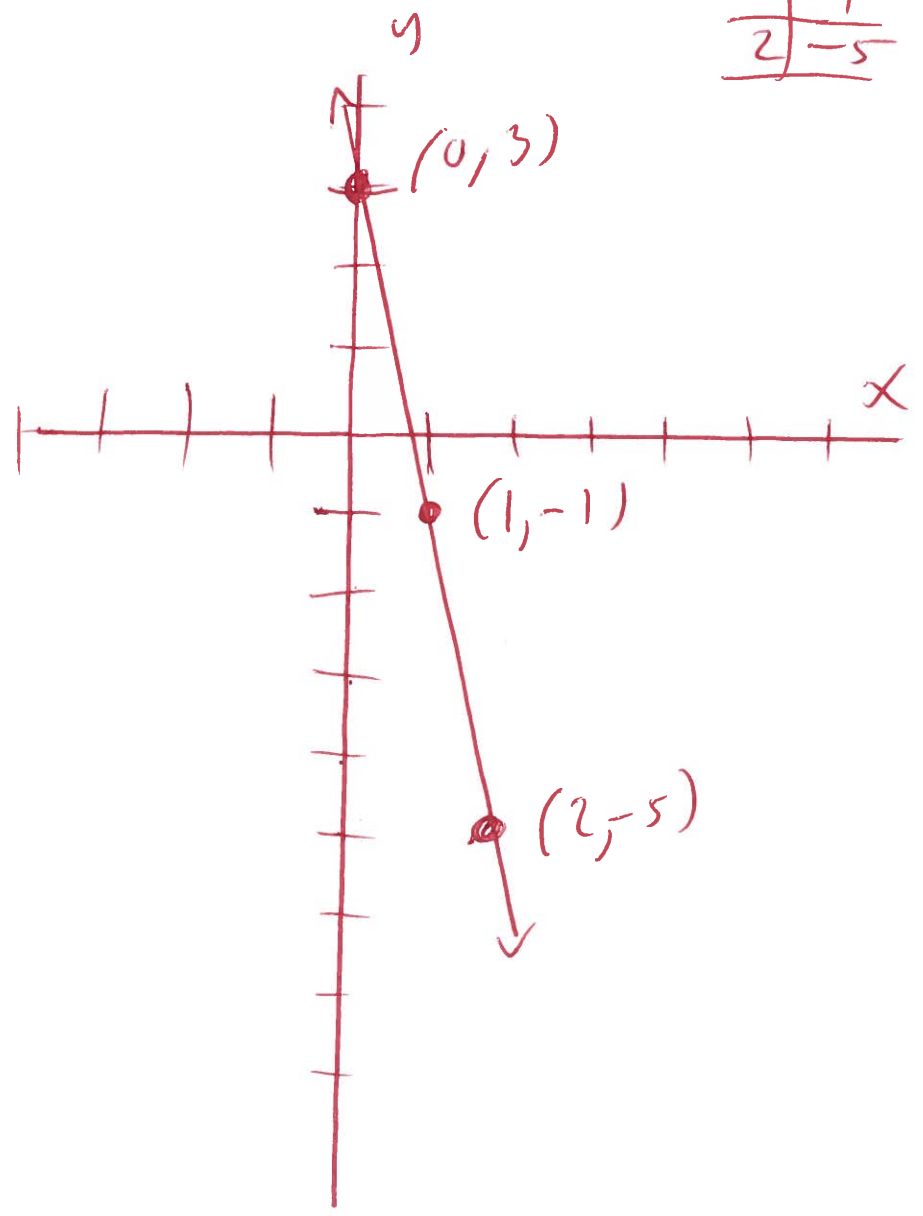
$y = -1$

$y = -4(2) + 3$

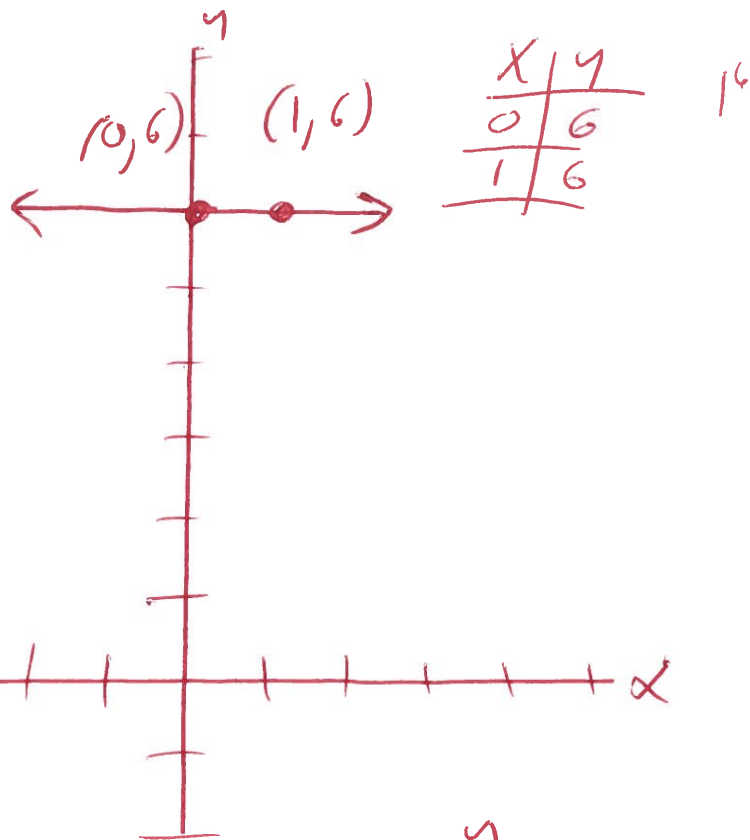
$y = -8 + 3$

$y = -5$

x	y
0	3
1	-1
2	-5



37. $y=6$ graph



38. $7x - 2y = 14$
find x-intercept let $y=0$

$$7x - 2(0) = 14$$

$$7x - 0 = 14$$

$$7x = 14 \quad \text{x-intercept}$$

$$\frac{7x}{7} = \frac{14}{7} \quad (2, 0)$$

$$x = 2$$

$$7x - 2y = 14$$

find y-intercept let $x=0$

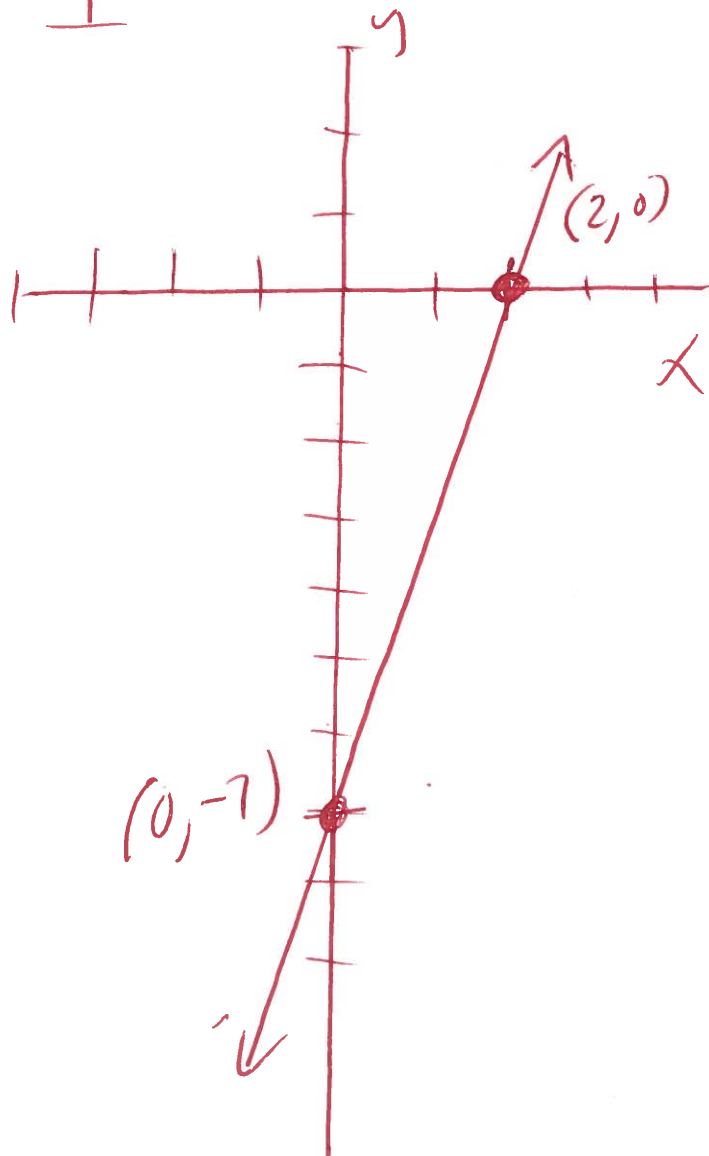
$$7(0) - 2y = 14$$

$$0 - 2y = 14$$

$$-2y = 14$$

$$\frac{-2y}{-2} = \frac{14}{-2} \quad \text{y-intercept}$$

$$y = -7 \quad (0, -7)$$



AND METHOD

OR

Graph

38. $7x - 2y = 14$

write in slope intercept form first

$y = mx + b$

$$7x - 2y - 7x = 14 - 7x$$

$$-2y = 14 - 7x$$

$$\frac{-2y}{-2} = \frac{14}{-2} - \frac{7x}{-2}$$

$$y = -7 + \frac{7}{2}x$$

$y = \frac{7}{2}x - 7$

$$y = \frac{7}{2}(0) - 7$$

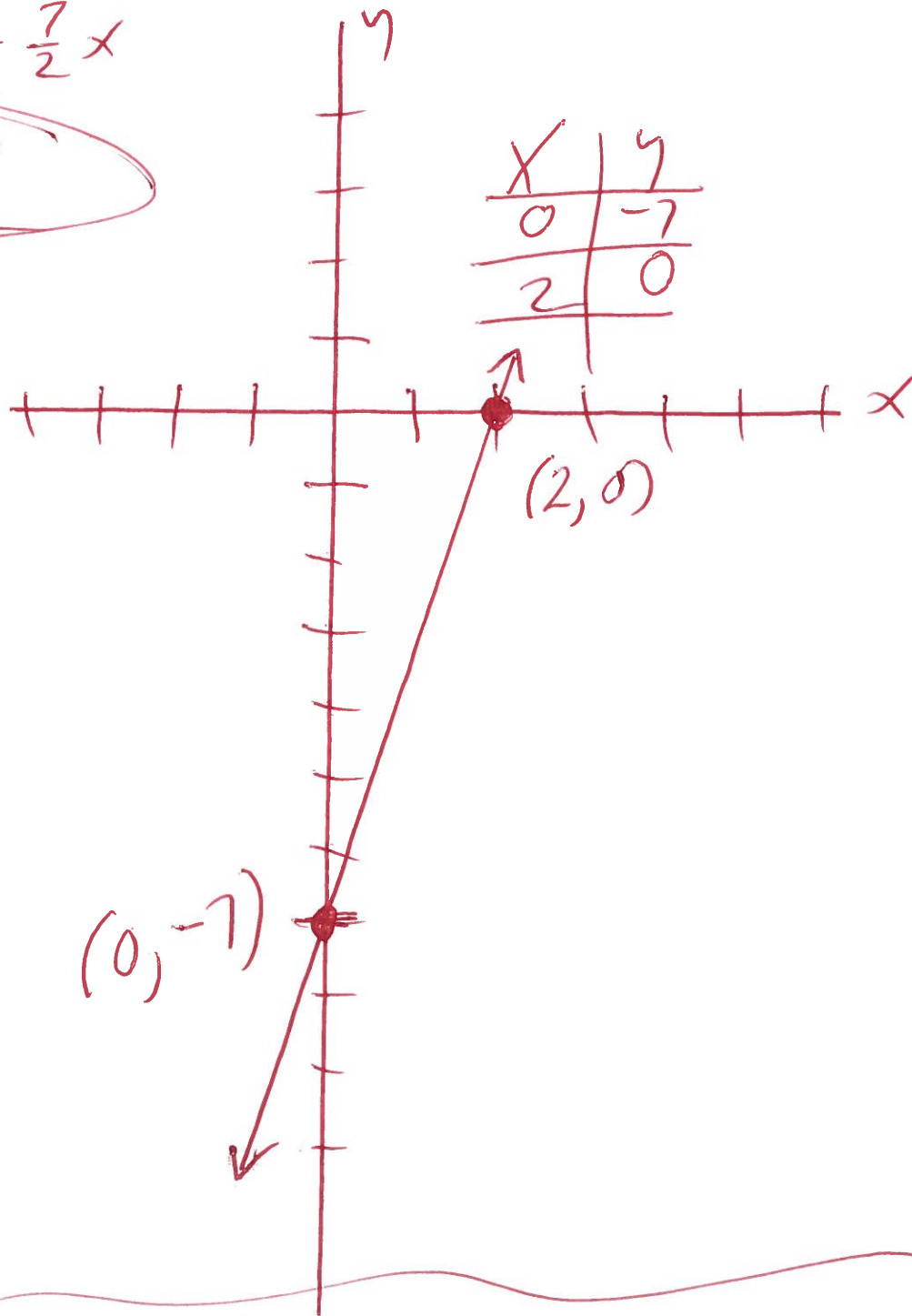
$$y = 0 - 7$$

$$y = -7$$

$$y = \frac{7}{2}(2) - 7$$

$$y = 7 - 7$$

$$y = 0$$



39

(5, 8) and (-6, 2)

find slope

$x_1 \quad y_1$

$x_2 \quad y_2$

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

$$m = \frac{(8) - (2)}{(5) - (-6)}$$

$$m = \frac{8 - 2}{5 + 6}$$

$$m = \frac{6}{11}$$

11

40

$3x - 5y = 15$ find slope

$$3x - 5y - 3x = 15 - 3x$$

$$-5y = 15 - 3x$$

$$\frac{-5y}{-5} = \frac{15}{-5} - \frac{3x}{-5}$$

$$y = -3 + \frac{3}{5}x$$

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

$$\text{Slope} = m = \frac{3}{5}$$

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

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

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

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

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

$$y - 7 = 7x + 21$$

$$y - 7 + 7 = 7x + 21 + 7$$

$$y = 7x + 28$$

(42) $3x - y = 7$ $x + 4y = 11$ Is $(4, 5)$ a solution x, y

$$3(4) - (5) = 7$$

$$12 - 5 = 7$$

$$7 = 7 \text{ yes}$$

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

$$4 + 20 = 11$$

$$24 \neq 11 \text{ no}$$

NO

$3x - y = 7$ $x + 4y = 11$ Is $(3, 2)$ a solution x, y

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

$$9 - 2 = 7$$

$$7 = 7 \text{ yes}$$

$$(3) + 4(2) = 11$$

$$3 + 8 = 11$$

$$11 = 11 \text{ yes}$$

YES

$$(43) \quad y = 2x + 1$$

$$4y - 6x = 10$$

$$\overbrace{4(2x+1)} - 6x = 10 \quad \text{Subst}$$

$$8x + 4 - 6x = 10$$

$$2x + 4 = 10$$

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

$$2x = 6$$

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

$$x = 3$$

Subst

$$y = 2x + 1$$

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

$$y = 6 + 1$$

$$y = 7$$

$$(x, y) = (3, 7)$$

(44)

$$x + 4y = 11$$

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

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

$$-3x - 12y = -33$$

$$12x + 12y = -12$$

$$9x + 0 = -45$$

$$9x = -45$$

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

$$x = -5$$

Subst

$$x + 4y = 11$$

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

$$-5 + 4y = 11$$

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

$$4y = 16$$

$$\frac{4y}{4} = \frac{16}{4}$$

$$y = 4$$

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

45. $(-3m^4n^4)(7mn^5) =$
 $(-3m^4n^4)(7m^1n^5) =$
 $-21m^{4+1}n^{4+5} =$
 $-21m^5n^9 =$

46. $(3z^{12})(-2z^7)(z^2) =$
 $(3z^{12})(-2z^7)(1z^2) =$
 $-6z^{12+7+2} =$
 $-6z^{21} =$

47. $(z^2)^5 =$
 $z^{(2)(5)} =$
 $z^{10} =$

48

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

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

$$16x^{6+6} =$$

$$16x^{12} =$$

49

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

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

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

$$(-5)^2 a^{10} b^6 c^2 =$$

$$(-5)(-5) a^{10} b^6 c^2 =$$

$$25 a^{10} b^6 c^2 =$$

50. $\left(\frac{-8xz^5}{y}\right)^3 =$

$$\left(\frac{(-8)^1 x^1 z^5}{y^1}\right)^3 =$$

$$\frac{(-8)^{1(3)} x^{1(3)} z^{5(3)}}{y^{1(3)}} =$$

$$\frac{(-8)^3 x^3 z^{15}}{y^3} =$$

$$\frac{(-8)(-8)(-8) x^3 z^{15}}{y^3} =$$

$$\frac{-512 x^3 z^{15}}{y^3} =$$

51.

$$\frac{9x^4y^2z}{x^2yz} =$$

$$\frac{9x^4y^2z^1}{x^2y^1z^1} =$$

$$9x^{4-2}y^{2-1} =$$

$$9x^2y^1 =$$

$$9x^2y =$$

52.

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

$$P(7) = (7)^2 + (7) + 3$$

$$P(7) = (7)(7) + (7) + 3$$

$$P(7) = 49 + 7 + 3$$

$$P(7) = 56 + 3$$

$$P(7) = 59$$

$$53) \quad 6a^2 - 3ab + 3b^2 - 2a^2 - 9ab + 5b^2 =$$

$$4a^2 - 12ab + 8b^2 =$$

$$54) \quad (2y^2 + 2y - 3) - (-5y + 6) =$$

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

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

$$55) \quad (x+7)(x^3 - 5x + 6) =$$

$$x^4 - 5x^2 + 6x + 7x^3 - 35x + 42 =$$

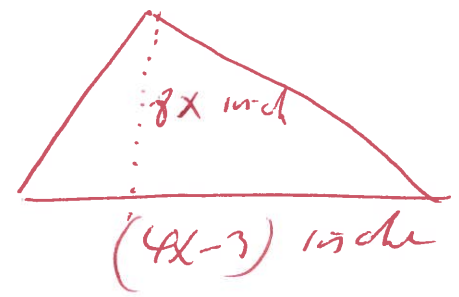
$$x^4 + 7x^3 - 5x^2 - 29x + 42 =$$

$$56) \quad -4x(x^2 + 3x - 9) =$$

$$-4x^3 - 12x^2 + 36x =$$

57. find area

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



$$A = \frac{1}{2}(4x-3)(8x)$$

$$A = \frac{1}{2}(32x^2 - 24x)$$

$$A = \frac{1}{2}(32x^2) - \frac{1}{2}(24x)$$

$$A = 16x^2 - 12x \quad \text{Square inches}$$

58. $(a-7)(a+7) =$

$$a^2 + 7a - 7a - 49 =$$

$$a^2 - 49 =$$

59. $(4d-3c)^2 =$

$$(4d-3c)(4d-3c) =$$

$$16d^2 - 12dc - 12dc + 9c^2 =$$

$$16d^2 - 24dc + 9c^2 =$$

60. $\left(\frac{1}{3}\right)^{-2} =$

21

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

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

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

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

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

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

$$9 =$$

61.

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

$$\frac{c^8}{c^1} = \text{rewrite}$$

$$c^{8-1} =$$

$$c^7 =$$

62.

$$(-4x^5y^{-5})(5x^{-1}y^3) =$$

$$-20x^{5-1}y^{-5+3} =$$

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

$$\frac{-20x^4}{y^2} = \text{rewrite}$$

63. 0.00000171 =

$1.71 \times 10^{-6} =$

64. 27, 72 find GCF

GCF = 3 · 3
= 9

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

3 27	2 72
3 9	2 36
3 3	2 18
1	3 9
	3 3

27 = 3 · 3 · 3
 72 = 2 · 2 · 2 · 3 · 3

65. 5x + 30 = factor

5(x + 6) =

66. $x^2 - 10x + 24 =$ factor

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

Possible

24 · 1
 12 · 2
 6 · 4
 3 · 8

✓ (x - 4)(x - 6) =
 $x^2 - 6x - 4x + 24 =$
 $x^2 - 10x + 24 =$ ✓ Good

(67) $x^2 - 4x - 45 =$ factor

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

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

$x^2 - 9x + 5x - 45 =$

$x^2 - 4x - 45 =$ ✓ Good

45.1
15.3 possible
9.5

(68) $121x^2 - 81y^2 =$ factor

$(11x)^2 - (9y)^2 =$ rewrite

$(11x+9y)(11x-9y) =$

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

(69) $8x(x-7) = 0$

set $8x = 0$ OR $x-7 = 0$

$\frac{8x}{8} = \frac{0}{8}$ OR $x-7+7 = 0+7$

$x = 0$

OR $x = 7$

^{Solve}
 70) $(5x+9)(4x-9)=0$

but $5x+9=0$ OR $4x-9=0$

$5x+9-9=0-9$ OR $4x-9+9=0+9$

$5x=-9$ OR $4x=9$

$\frac{5x}{5} = \frac{-9}{5}$ OR $\frac{4x}{4} = \frac{9}{4}$

$x = \frac{-9}{5}$ OR $x = \frac{9}{4}$

^{Solve}
 71) $x^2 + 3x - 10 = 0$
 $(x-2)(x+5) = 0$

possible
 10, 1
 2, 5

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

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

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

72

$x^2 - 4x = 0$ *Solve*

$x(x-4) = 0$

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

73

$x^3 - 12x^2 + 27x = 0$
 $x(x^2 - 12x + 27) = 0$

Possible
27.1
3, 9

$x(x-3)(x-9) = 0$

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

$$\textcircled{74} \frac{x^2 - 36}{x^2 - 4x - 12} \cdot \frac{x+2}{x} =$$

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

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

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

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

$$\textcircled{75} \frac{5m}{4n} + \frac{3m}{4n} =$$

$$\frac{5m + 3m}{4n} =$$

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

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

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

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

$2 \overline{) 8}$ $2 \overline{) 4}$
 $2 \overline{) 4}$ $2 \overline{) 2}$
 $2 \overline{) 2}$ 1
 1

$$8 = 2 \cdot 2 \cdot 2$$

$$4 = 2 \cdot 2$$

$$(76) \frac{z-5}{4} = \frac{z}{9}$$

$$9(z-5) = 4(z) \quad \text{cross mult}$$

$$9z - 45 = 4z$$

$$9z - 45 + 45 = 4z + 45$$

$$9z = 4z + 45$$

$$9z - 4z = 4z + 45 - 4z$$

$$5z = 45$$

$$\frac{5z}{5} = \frac{45}{5}$$

$$z = 9$$

$$(77) \sqrt{121x^6} =$$

$$\sqrt{11^2 x^6} = \text{rewrite}$$

$$11^{\frac{2}{2}} x^{\frac{6}{2}} = \text{divide powers}$$

$$11^1 x^3 =$$

$$11x^3 =$$

78.

$$\sqrt[3]{343} =$$

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

$7^{\frac{3}{3}}$ divides the power

$$7^1 =$$

$$7 =$$

Primes 2, 3, 5, 7...

35

$$\begin{array}{r}
 7 \overline{) 343} \\
 \underline{7 49} \\
 7 7 \\
 \underline{7 7} \\
 1
 \end{array}$$

79.

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

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

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

80

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

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

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

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

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

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

81.

$$625^{\frac{5}{4}} =$$

$$(5^4)^{\frac{5}{4}} = \text{rewriting}$$

$$5^{\frac{4}{1} \cdot \frac{5}{4}} =$$

$$5^{\frac{20}{4}} =$$

$$5^5 =$$

$$5 \cdot 5 \cdot 5 \cdot 5 \cdot 5 =$$

$$3125 =$$

Prima 2, 3, 5, 7, ... 31

$$\begin{array}{r} 5 \overline{) 625} \\ \underline{5} \\ 125 \\ \underline{100} \\ 25 \\ \underline{25} \\ 0 \end{array}$$

82.

$$\sqrt{40} \quad \text{Prima } 2, 3, 5, 7, \dots$$

$$\sqrt{40 \cdot 10} =$$

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

$$2\sqrt{10} =$$

$$\begin{array}{r} 2 \overline{) 40} \\ \underline{4} \\ 0 \\ 2 \overline{) 20} \\ \underline{20} \\ 0 \\ 2 \overline{) 10} \\ \underline{10} \\ 0 \\ 5 \overline{) 5} \\ \underline{5} \\ 0 \end{array}$$

$$\textcircled{83} \quad \sqrt{x-19} = 5$$

$$(\sqrt{x-19})^2 = (5)^2$$

$$x-19 = 25$$

$$x-19+19 = 25+19$$

$$\textcircled{x=44}$$

ck

$$\sqrt{x-19} = 5$$

$$\sqrt{44-19} = 5$$

$$\sqrt{25} = 5$$

$$5 = 5$$

Good

answer
 $\{44\}$

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

Formula
 $\sqrt{-1} = i$
 $\sqrt{-4} = 2i$
 $\sqrt{-9} = 3i$
 $\sqrt{-25} = 5i$

85. $(x+8)^2 = 36$
 $\sqrt{(x+8)^2} = \pm\sqrt{36}$
 $x+8 = \pm 6$

$x+8 = -6$ OR $x+8 = 6$
 $x+8-8 = -6-8$ OR $x+8-8 = 6-8$
 $x = -14$ OR $x = -2$

Answer
 $\{-14, -2\}$

ck
 $(x+8)^2 = 36$
 $(-14+8)^2 = 36$
 $(-6)^2 = 36$
 $(-6)(-6) = 36$
 $36 = 36$ ✓
Good

ck
 $(-2+8)^2 = 36$
 $(6)^2 = 36$
 $(6)(6) = 36$
 $36 = 36$ ✓
 Good

86

$$m^2 + 8m + 15 = 0$$

$$(m + 3)(m + 5) = 0$$

$$\text{at } m + 3 = 0 \text{ OR } m + 5 = 0$$

$$m + 3 - 3 = 0 - 3 \text{ OR } m + 5 - 5 = 0 - 5$$

$$m = -3 \text{ OR } m = -5$$

OR USE Quad formula

$$1m^2 + 8m + 15 = 0$$

$$a = 1, b = 8, c = 15$$

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

$$m = \frac{-(8) \pm \sqrt{(8)^2 - 4(1)(15)}}{2(1)}$$

$$m = \frac{-8 \pm \sqrt{64 - 60}}{2}$$

$$m = \frac{-8 \pm \sqrt{4}}{2}$$

$$m = \frac{-8 \pm 2}{2}$$

$$m = -4 \pm 1$$

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

$$m = -3 \text{ OR } m = -5$$

15.1 possible do
3.5

$$87. \quad x^2 - 6x + 9 = 0$$

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

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

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

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

OR use Quadratic formula

$$1x^2 - 6x + 9 = 0$$

$$a=1, b=-6, c=9$$

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

$$x = \frac{-(-6) \pm \sqrt{(-6)^2 - 4(1)(9)}}{2(1)}$$

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

$$x = \frac{6 \pm \sqrt{0}}{2}$$

$$x = \frac{6 \pm 0}{2}$$

$$x = \frac{6+0}{2} \text{ or } x = \frac{6-0}{2}$$

$$x = \frac{6}{2} \text{ or } x = \frac{6}{2}$$

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

9.1 possibly
3.3

41

Answer
{ 3 }