Welcome to Algebra I

Your Summer assignment:

You must complete all the noted problems. *Make sure answers are circled, neat, and easily readable.*

Make sure that you read and follow all the instructions!!

Make sure you use pencil-USE PEN & LOSE 10!!!

Your summer assignment will count for 5 homework grades and will be collected on the first day of class.

Within the first week of school there will be a test on the summer assignment material. It is your responsibility to come to school on the first day with the questions that you could not work out on your own.

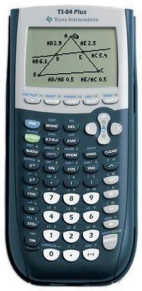
For the first day of class:

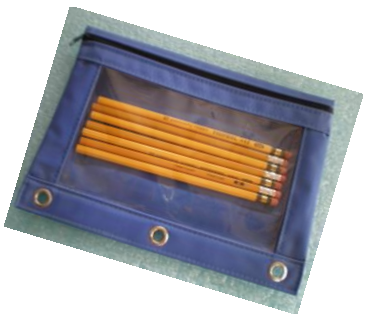
Have your summer assignment in order, stapled and ready to turn in.

Have an algebra 1 three ring binder ready with dividers, white lined paper and graph paper.

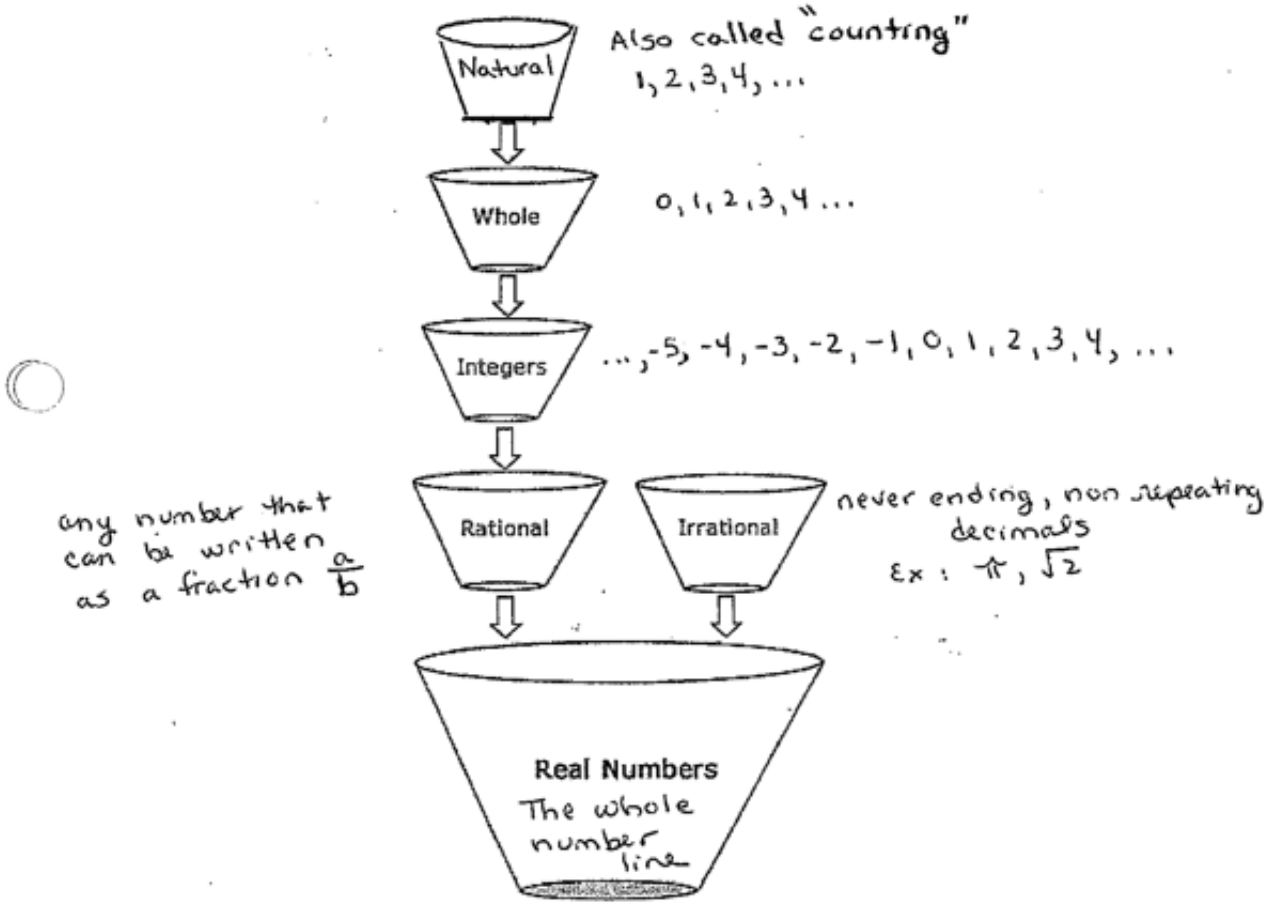
Bring your graphing calculator. We recommend the ti-84 or ti-84plus.

Bring your pencils and a ruler. You also must have an eraser!!





Sets of Numbers



Classify each real number into the appropriate SETS. Refer to the diagram on page 2: Natural, Whole, Integer, Rational, Irrational, Real. They may belong in more than 1!!!!!!

1) -15

2) 11

3) $\sqrt{30}$

4) $\frac{17}{3}$

5) 6

6) 0

7) -13

8) 3

9) $\frac{10}{11}$

10) 14

11) -13

12) π

Do each calculation without a calculator and check your answers with a calculator.

1.) $12 - 5$

2.) $5 - 12$

3.) $15 + -6$

4.) $15 - -6$

5.) $-3 + -7$

6.) $-3 - (-7)$

7.) 4×-2

8.) -4×-7

9.) $-24 \div 3$

Do each calculation without a calculator and check your answers with a calculator. Remember, if there are no parentheses, you must do multiplication or division before addition or subtraction. (· = multiply)

1.) $9 - 4 \cdot 2 + 3$ 2.) $9 - 4 + 12 \cdot 3$ 3.) $-3 \cdot 6 + 4 \cdot -5$

4.) $-18 + -6 \cdot -2 + 5$ 5.) $2 \cdot (9 - 18) - (-10)$ 6.) $-(5 - 9) \cdot -3 \cdot 6$

Find the sum or difference of these fractions without a calculator then reduce to simplest form. (Improper fractions are OK)

1. $\frac{1}{2} + \frac{2}{3} =$ _____ 2. $\frac{8}{12} + \frac{8}{11} =$ _____

3. $\frac{2}{7} + \frac{6}{10} =$ _____ 4. $\frac{1}{6} + \frac{6}{11} =$ _____

1. $\frac{5}{7} - \frac{2}{3} =$ _____ 2. $\frac{2}{3} - \frac{3}{8} =$ _____

3. $\frac{6}{7} - \frac{2}{6} =$ _____ 4. $\frac{4}{6} - \frac{4}{8} =$ _____

Find the reciprocal of the number

1.) ¼ 2.) 26 3.) $7\frac{4}{5}$

Multiply or divide. (No calculator, give answer in simplest form)

1. $\frac{1}{4} \div \frac{9}{10} =$ _____

2. $\frac{5}{9} \div \frac{1}{2} =$ _____

3. $\frac{1}{3} \div \frac{6}{9} =$ _____

4. $\frac{8}{10} \div \frac{2}{5} =$ _____

1. $\frac{6}{8} \times \frac{3}{12} =$ _____

2. $\frac{1}{2} \times \frac{4}{5} =$ _____

3. $\frac{2}{4} \times \frac{7}{8} =$ _____

4. $\frac{2}{7} \times \frac{7}{9} =$ _____

5. $\frac{4}{10} \times \frac{1}{6} =$ _____

6. $\frac{2}{5} \times \frac{1}{4} =$ _____

Evaluate each expression with the given values using correct order of operations. Simplify.

1) $n^2 - m$; use $m = 7$, and $n = 8$

2) $8(x - y)$; use $x = 5$, and $y = 2$

3) $yx \div 2$; use $x = 7$, and $y = 2$

4) $m - n \div 4$; use $m = 5$, and $n = 8$

5) $x - y + 6$; use $x = 6$, and $y = 1$

6) $z + x^3$; use $x = 1$, and $z = 19$

7) $y + yx$; use $x = 15$, and $y = 8$

8) $q \div 6 + p$; use $p = 10$, and $q = 12$

Simplify each expression.

1) $3(6 + 7)$

2) $5 \times 3 \times 2$

3) $72 \div 9 + 7$

4) $2 + 7 \times 5$

Simplify each expression. (no calculator)

5) $9 + 8 - 7$

6) $9 - 32 \div 4$

7) $5(10 - 1)$

8) $48 \div (4 + 4)$

9) $20 \div (4 - (10 - 8))$

10) $40 \div 4 - (5 - 3)$

Combine like terms:

1) $-6k + 7k$

2) $12r - 8 - 12$

3) $n - 10 + 9n - 3$

4) $-4x - 10x$

5) $-r - 10r$

6) $-2x + 11 + 6x$

Combine like terms.

1) $10x + 3y + 5x =$ _____

3) $9y + 3y + 5x =$ _____

5) $8x + y - 2x =$ _____

7) $14x - 3x + 2y - y + 3x =$ _____

9) $23x + 3y - 5x =$ _____

Distribute and Simplify each expression.

21) $-4+7(1-3m)$

22) $-5n+3(6+7n)$

23) $-2n-(9-10n)$

24) $10-5(9n-9)$

25) $9a+10(6a-1)$

26) $-9(6m-3)+6(1+4m)$

27) $-10(1-9x)+6(x-10)$

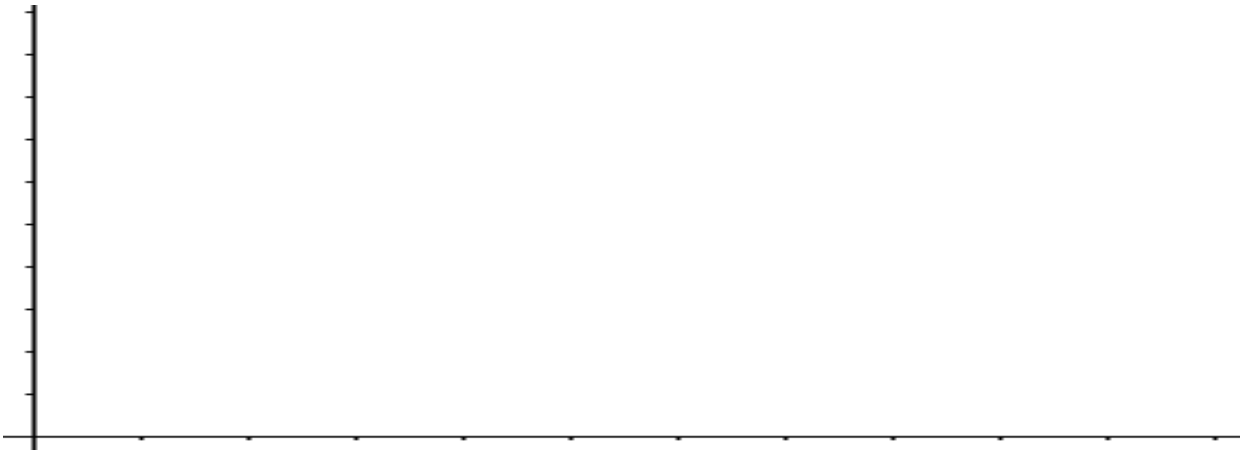
28) $5(-2n+4)+2(n+3)$

29) $-3(10b+10)+5(b+2)$

30) $-7(n+3)-8(1+8n)$

Eye Color	Blue	Brown	Green	Hazel	Other
# of Students with Characteristic	**4**	**12**	**0**	**0**	**2**

Make a ***bar graph*** of the eye colors in this classroom using the graph below:



1. Which eye color is *most* popular (the maximum) in our classroom? _____
2. Which eye color is *least* popular (the minimum) in our classroom? _____
3. What is the *range* of this data? In other words, how many more students have the most popular eye color rather than the least popular eye color?

Shoe Size	5	6	7	8	9	10	11	12
# of Students with Characteristic	**1**	**1**	**1**	**0**	**5**	**4**	**3**	**1**

Make a ***dot plot*** of the shoe size comparisons of this classroom using the graph below:

A ***dot plot*** is useful to…

1. What is the *maximum* of this data?
2. What is the *minimum* of this data?
3. What is the *range* of the given data?

Show all steps to solve these equations:

1.) $-20 = -4x - 6x$

2.) $22 = -1 + 2n - 5$

3) $8x - 2 = -9 + 7x$

4) $a + 5 = -5a + 5$

5) $4m - 4 = 4m$

6) $p - 1 = 5p + 3p - 8$

7.) 5p -14 = 8p + 4

8.) 3(x+2) = 18

Complete the following questions regarding measures of center:

1) The heights (in cm) of 9 students of a class are as follows:

155, 160, 145, 149, 150, 147, 152, 144, 148

Find the median of this data.

2) Find the mode and range of the following quiz scores (out of 10) obtained by 10 students.

4, 6, 5, 9, 3, 2, 7, 7, 1, 8

3) The following number of goals were scored by a team in a series of 10 matches.

2, 3, 4, 5, 0, 1, 13, 23, 4, 3

Find the mean and median of these scores.

4) On a mathematics test given to 15 students, the following scores(out of 100) were recorded:

41, 39, 48, 52, 46, 62, 54, 40, 96, 52, 98, 40, 42, 52 60,

Find the mean, median and mode of this data.

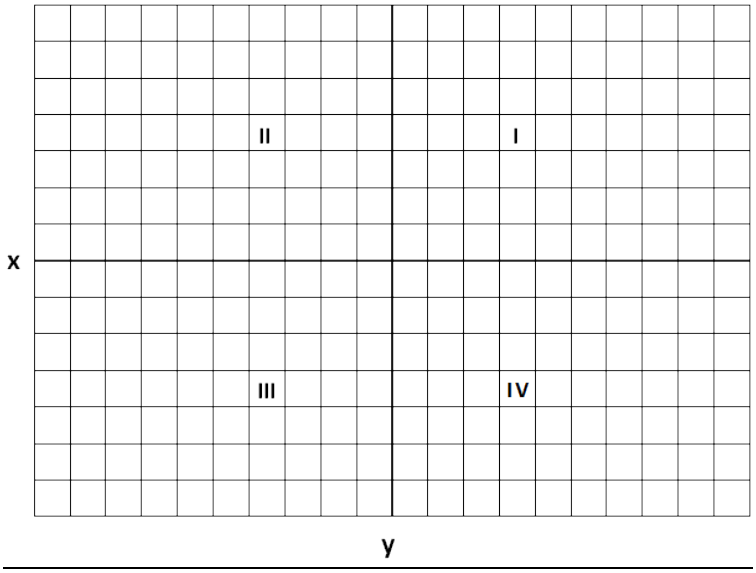
Identify the location(axis or quadrant) of each point listed and then plot and label each point on the given graph:

A (4,-3)___4th Quadrant_____ E (-2,-3)_____

B (2.5,4)_____ F (-4,6)_____

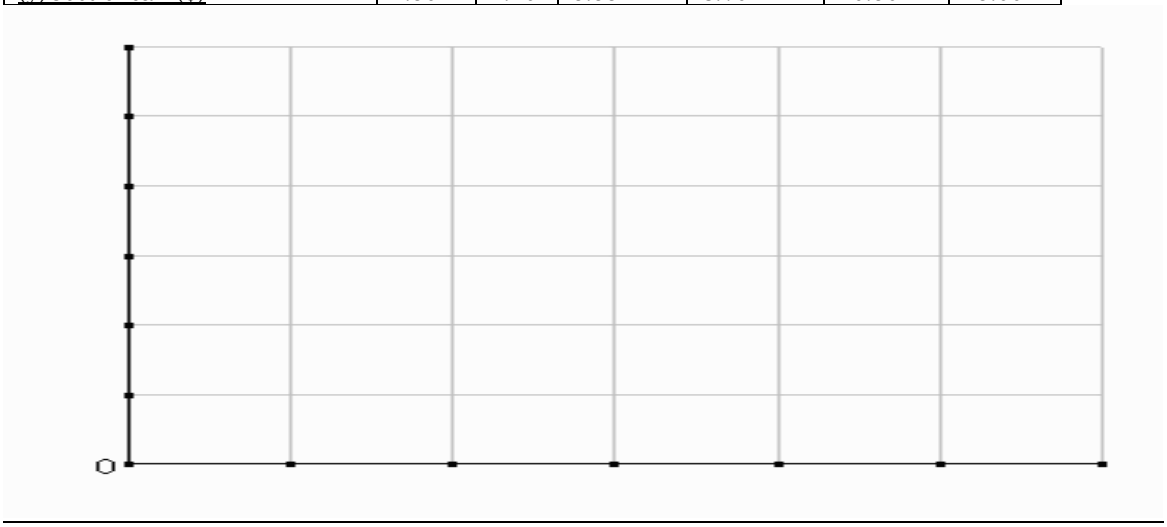
C (-3,0)_____ G (5,4)_____

D (-6.5,-5)_____ H (0,-7)_____

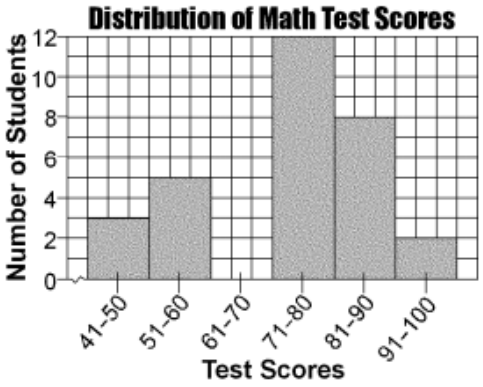


Use the following table to make a scatterplot.

(x)Length of call (min)	3	5	12	19	23	30
(y)Cost of call ($)	1.50	2.40	5.55	8.70	10.50	15.00



The graph below shows the distribution of scores of 30 students on a mathematics tes



Complete the frequency table below using the data in the frequency histogram shown.

Test Scores	Frequency
91-100	
81-90	
71-80	
61-70	
51-60	
41-50	

1.) How many students were in the math class?_____

2.) How many students received a grade below 60?_____

3.) How many students passed the exam? (over 70)_____

Find the slope between the points. (Remember $\frac{0}{\#} = 0, \frac{\#}{0} = undefined$)

1.) (3,1) & (0,7)

_____

2.) (-2, 6) & (1,3)

_____

3.) (3,4) & (0,2)

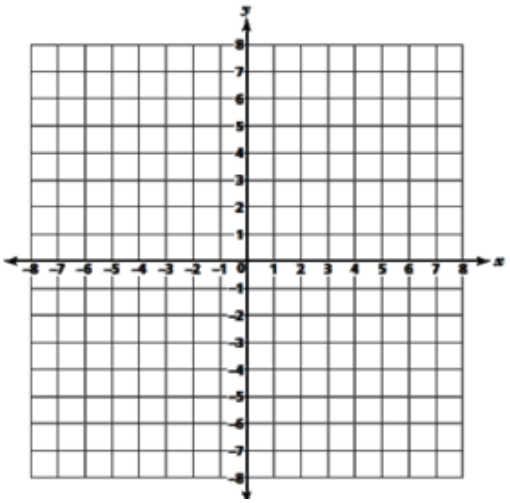
_____

4.) (5,-1) & (4, -1)

_____

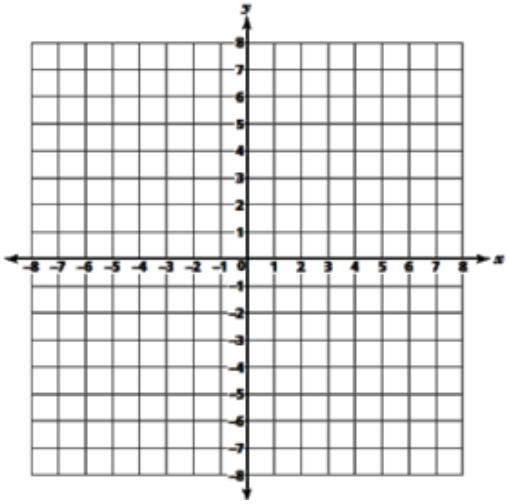
1 Complete the table for $y = x + 3$ and graph the resulting line.

x	y
-5	
0	
4	



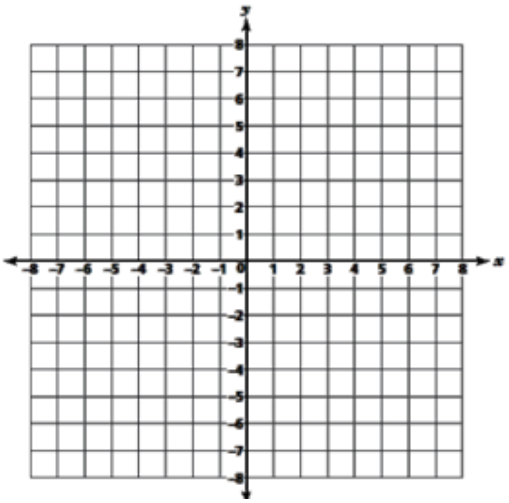
2 Complete the table for $y = 3x + 1$ and graph the resulting line.

x	y
-3	
0	
2	



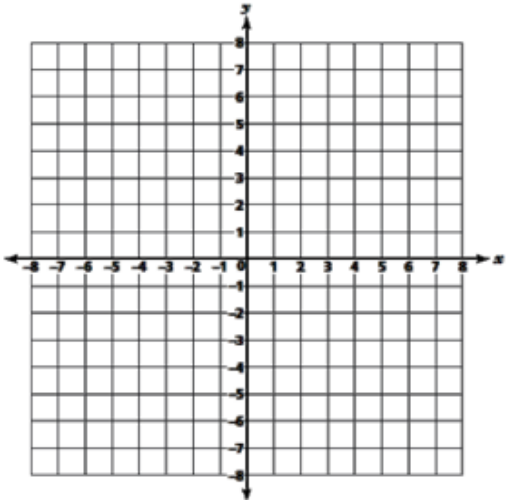
3 Complete the table for $y = -2x$ and graph the resulting line.

x	y
-4	
0	
3	



4 Complete the table for $y = -x - 2$ and graph the resulting line.

x	y
-3	
0	
4	



Write the equation for the line given the slope and y intercept.

1) Slope = -1, y-intercept = -5

2) Slope = -1, y-intercept = -1

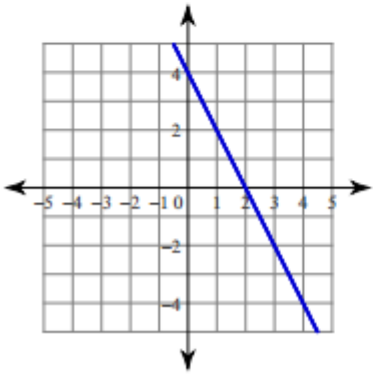
3) Slope = $\frac{3}{2}$, y-intercept = 0

4) Slope = $-\frac{3}{4}$, y-intercept = -4

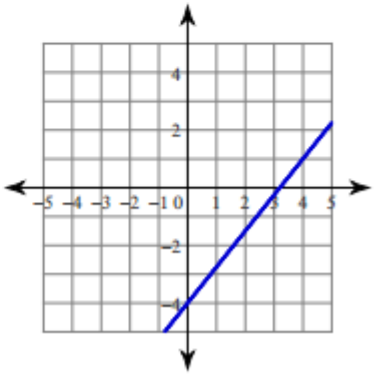
5) Slope = $-\frac{3}{5}$, y-intercept = 2

Find the slope and y-intercept of each line. Write the equation of the line.

6)



7)



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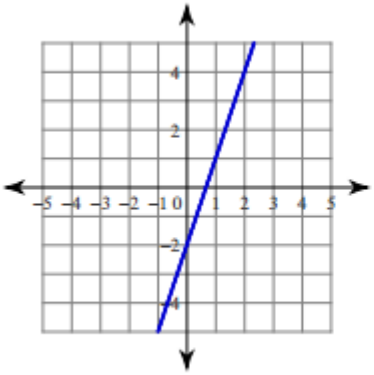

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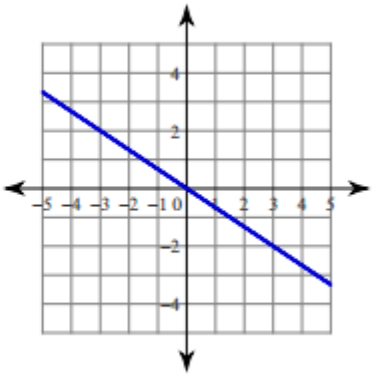

Find the value of the unknown number in each proportion.

a.) $\frac{m}{2} = \frac{3}{4}$

b.) $\frac{n}{14} = \frac{4.5}{7}$

c.) $\frac{27}{18} = \frac{p}{7}$

d.) $\frac{x}{-3} = \frac{7}{-10.5}$

Find the unknown number.

a.) 75% of 68 is what number?

b.)120% of 37 is what number?

c.) 270 is what percent of 90?