1. Below is a piece of an addition table. Determine the missing number.

8	**9**	10	11
7	8	9	10

←

2. Locate each of the following points on a number line similar to the one below. Make sure you **plot** your points!

D A-B   B A   A+B 2A
-A
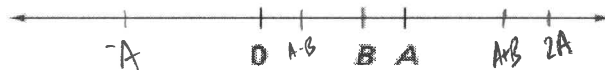
a. -A   b. A +B   c. A-B   d. 2A

3. In the list below, the numbers increase by the same amount each time. Fill in the blanks of the list.

a. b. 0, $\frac{1}{12}$, $\frac{1}{6}$, $\frac{1}{4}$, $\frac{1}{3}$

$\frac{1}{12}$ $\frac{2}{12}$ $\frac{3}{12}$ $\frac{4}{12}$

4. Fill in the blank with a number that makes the equation true.
$4(\frac{1}{2} + \square) = 8$

$\square = 1\frac{1}{2}$ or $\frac{3}{2}$

5. Find the missing number.
$\square \cdot 6 = \frac{6}{5}$

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

6. $36(\frac{1}{2} + \frac{1}{3} + \frac{1}{4} + \frac{1}{9})$

$18 + 12 + 9 + 4$

$\boxed{43}$

7. Describe how you can use backtracking to solve the equation $\frac{x-750}{150} = 167$. Describe the steps you perform without solving the equation.

- Multiply 167 by 150
- Add 750 to the result

8. Solve the equation below.
$$9(x + 2) - 3(4x + 2) = x - 2(11 + x)$$

$9x + 18 - 12x - 6 = x - 22 - 2x$

$-3x + 12 = -x - 22$

$+3x \qquad +3x$

$12 = 2x - 22$

$+22 \qquad +22$

$\frac{34}{2} = \frac{2x}{2}$

$\boxed{17 = x}$

9. Write the resulting equation when you do the basic move of dividing by two to the equation $2x - 4 = 26$.

$\frac{2x - 4}{2} = \frac{26}{2}$

$\boxed{x - 2 = 13}$

10. Consider the equation $3x + 2y = 15$. Solve for y.

$-3x \qquad -3x$

$\frac{2y}{2} = \frac{15 - 3x}{2}$

$y = \frac{15 - 3x}{2}$ or $y = \frac{15}{2} - \frac{3}{2}x$

11. Find the solution/solutions for $|4x + 7| = 5$

$4x + 7 = 5 \qquad\qquad 4x + 7 = -5$

$-7 \quad -7 \qquad\qquad -7 \quad -7$

$\frac{4x}{4} = \frac{-2}{4} \qquad\qquad \frac{4x}{4} = \frac{-12}{4}$

$\boxed{x = -\frac{1}{2} \qquad , \qquad x = -3}$

12. Find the distance between the points (-4,2) and (4,-4).
$\quad\quad\quad x_1 \; y_1 \qquad x_2 \; y_2$

$d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$
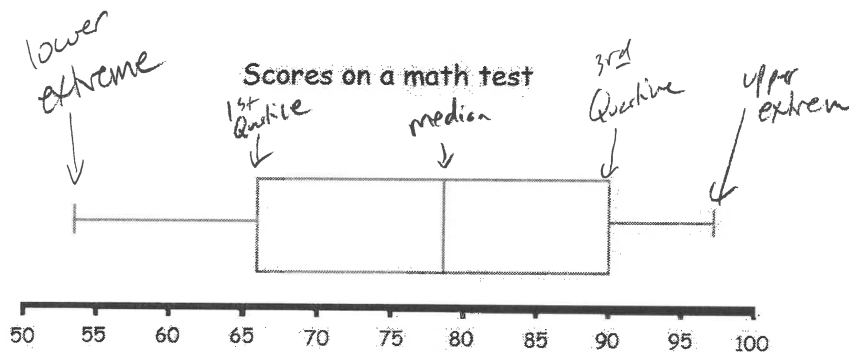
$d = \sqrt{(4 - (-4))^2 + (-4 - 2)^2}$

$d = \sqrt{(8)^2 + (-6)^2}$

$d = \sqrt{64 + 36}$

$d = \sqrt{100}$

$d = 10 \text{ units}$

13. Using the box and whisker plot below, find the lower extreme, first quartile(lower quartile) median, third quartile(upper quartile), and upper extreme.

lower
extreme

Scores on a math test

1st Quartile

median

3rd Quartile

upper extrem

50 55 60 65 70 75 80 85 90 95 100

lower extreme : ~53
Q1 : ~66
Median : ~78
Q3 : 90
Upper extreme : ~97

14. In a survey, 100 people were asked, "Do you know how to ski?" The table breaks down the responses by age group: less than 30 years old, between 30 and 50 years old, and over 50 years old. Use the table to answer part a and b.

a. What percentage of people older than 50 said they know how to ski?

$\frac{8}{20} = \frac{40}{100} = 40\%$

b. What percent of the people asked are ~~younger~~ 50 or younger? ~~than 50?~~

$\frac{80}{100} = 80\%$

	Yes	No	
< 30	32	18	50
30–50	15	15	30
> 50	8	12	20
	55	45	100

15. Find two points that satisfy the equation 3x + y = 9. Pick x-values between -3 and 3.

x	y
-3	18
-2	15
-1	12
0	9
1	6
2	3
3	0

16. Write the equation of the horizontal line that passes through (7,-5).

$y = -5$

17. How would the graph of $y-2= \sqrt{x}$ be different from $y= \sqrt{x}$.

It would be translated 2 units up.