Math 4. Homework 24

1.
   a. Find the largest and smallest of the following five numbers: 21, −12, 30, −1, 2
   b. Find the largest and smallest of the following numbers: $-\frac{15}{17}$, −1, $-\frac{3}{119}$, 0.2, 1, 0

2. The teacher wrote a few problems with decimals on the board, but Aniket erased all the decimal points. Put the decimal points back into the expressions to make them correct.

   $32 + 18 = 5$ $63 - 027 = 603$

3. In a class, there are 1.5 times as many boys as there are girls. If there are 35 students in the class, how many boys are there? *[Hint: convert the decimal number into a regular fraction]*

4. One shelf has $\frac{3}{4}$ as many books as on another shelve. How many books are on each of the shelves, if the total number of books is 49.

5. Simplify:
   a. $d^n d(-d^{n+1})d^n d^2 =$
   b. $2x^2y^3 \cdot (-4xy^2) =$
   c. $3^2 + 3^2 + 3^2 =$
   d. $3^k + 3^k + 3^k =$
   e. $3^k \cdot 3^k \cdot 3^k =$

6. Teddi wants to take 3 dogs with him on his morning walk. If Teddi owns 8 dogs, how many different groups of dogs can he choose for his walk?

7. Compute:

$3 + 2 \cdot (-6 - (-9)) =$ $\quad 1 - (5 + (-4)) =$ $\quad |(-5) + 4| =$

$|(-6) + (-9)| =$ $\quad |5 + (-4)| =$ $\quad | - 2 - 6| =$

8. Write the algebraic expression for the following problems and evaluate it for given values of variables:

a. There are *n* pears in the basket, which is $\frac{3}{7}$ of all fruits in the basket. How many fruits are there in the basket? $(n = 21)$

b. There is *x* candy in a box. Chocolate candies are $\frac{4}{9}$ of all candies. How many not chocolate candies are there in the box? $(x = 36)$

9. The volume of water increases by $\frac{1}{11}$ when it freezes. By how much the volume of ice does decrease when it melts?

10. Solve the inequality:

$$3(5x - 1) < 5x + 29$$

11. Using ruler draw a triangle on a graphing paper. Then, draw three altitudes in it. You can either use a triangle with a right angle or construct the altitudes as shown here https://www.mathopenref.com/constaltitude.html Did all three of your altitudes intersect in one point? (to draw a perpendicular use anything with the right angle).

12. Using ruler draw a triangle on a graphing paper, draw three medians in it. Try constructing the medians as shown here https://www.mathopenref.com/constmedian.html Did all three of your medians intersect in one point? Cut your triangle, try to balance it on a sharpened pencil at the point of intersection of the medians. It should balance!

13. Solve the following equations, mark the answers on a number line, find the coordinate of the midpoint of the segment.

Example:

$|x - 3| = 7$

$x - 3 = 7$ $\qquad$ $x - 3 = -7$

$x = 7 + 3 = 10$ $\qquad$ $x = -7 + 3 = -4$

Coordinate of midpoint is 3.

a. $|b - 2| = 3$

b. $|c + 1| =$