MATH 4:   Homework 1

1. Draw the X and Y plane on a graph paper using a RULER (It is also called Cartesian coordinate system). Mark and then connect the following points with the RULER.

   $A(0,0) \rightarrow B(6,10) \rightarrow C(9,0) \rightarrow D(0,6) \rightarrow E(12,6) \rightarrow A(0,0)$

Don't use more than half a page for this graph.

2. How many multiples of 3 are there between …

(a) … 1 and 20?
(b) … 1 and 100?
(c) … 1 and 200?
(d) … 100 and 200?

3. Compose an equation and solve it to answer the following question:

Lena is 5 years older than Andrew. Sum of their ages is 21. How old is each of them? (*hint: make an auxiliary drawing; make Lena or Andrew x, write expression for another one using x, write an equation, just like in class, solve it, write the answers: L: and A:*)

4. A cookie costs the same as two packs of chewing gum. Together, a cookie and one pack of gum cost 75 cents. How much does the cookie cost? (*hint: make the cheapest item x and make an auxiliary drawing*).

5. You have a number of 8 - ounce cups and 12 - ounce cups. Will you be able to measure exactly …
        (a) … 28 ounces of water?
        (b) … 32 ounces of water?
        (c) … 34 ounces of water?

6. Compute:

   25×25 27×102 11111×11111 $111111111 \times 111111111$

7. Compute:

   $6)\overline{1662}$ $3)\overline{1770}$ $8)\overline{1672}$ $11)\overline{1111}$

8. * Two players are playing the following game: they take turns moving the hour hand of the clock. Each player is allowed to move it by exactly 2 or exactly 3 hours forward.

In the beginning of the game the hand points at 12. The player who moves the hand to 6 wins. Note that moving the hand past 6 (for example, from 5 to 7) it is not a win, and the game continues.

Try playing this game several times with your parents before attempting to answer the questions below. Build your game clock from a paper plate or use a toy one if you have at home.

Do you think a first player may have a winning strategy?

Do you think a second player may have a winning strategy?

Describe your strategy here (not in the notebook)

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