Math 4. Homework #16.

1. **Simplify**

$30 - 2 \cdot (2y + 1) =$ _____

$30 - 2 \cdot (2y - 1) =$ _____

2. **Fill in the missing numbers to complete the pattern:**

5.40 6.00 6.60 7.30 ☐ ☐

3. **Find all possible equivalent statements among the statements below:**

a. A is 40% of B.
b. A is 4 times smaller than B.
c. A is 25% of B.
d. A is 2 times smaller than B.
e. B is greater than A by 300%.
f. B is 2.5 times greater than A.
g. B is greater than A by 100%
h. A is smaller than B by 75%.
i. A is 50 % of B.
j. B is greater than A by 150%

4. **Solve the equation:**

$$14 - \frac{1}{2\frac{1}{7}x} = 2$$

5. Compare:

$|7-4| \square |7|-|4|$

$|3-7| \square |7|-|3|$

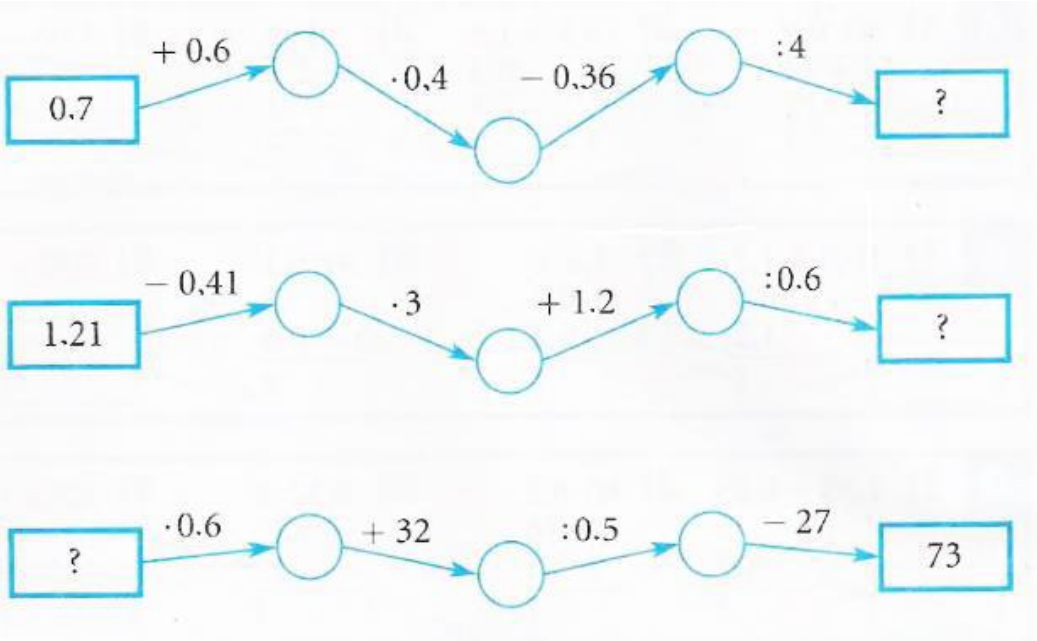
$|-7-3| \square |7|+|3|$

If a<0 and b>0

$|a+b| \square |a|+|b|$

$|b*a| \square b*|a|$

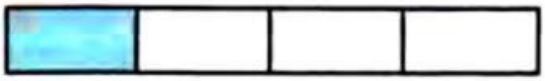
6. Find the missing numbers:



7. Which part of the rectangles below is shaded? What percent of the area is shaded in each?

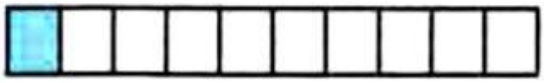
а)

в)

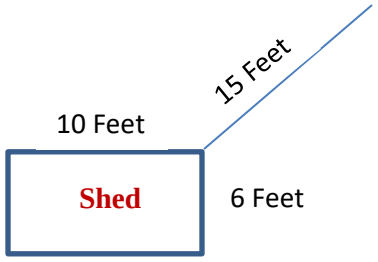


б)

г)



8. A cow is tethered to the corner of a rectangular shed. If the length of the rope is 15 feet, and the shed has length 10 feet and width 6 feet. Draw the shape of the field that is accessible to the cow and calculate the lengths of rope remaining after the cow turns corners.



9. Draw the segment AC = 6cm. Mark the point B in such a way that

а) $\frac{AC}{BC} = 1$; б) $\frac{AC}{BC} < 1$; в) $\frac{AC}{BC} > 1$; г) $\frac{AC}{BC} = 2$.

10. There are singers and dancers in our class. $\frac{1}{5}$ of all singers also dance and $\frac{1}{4}$ of all dancers also sing. Are there more singers or dancers in our class?

11. Simplify the following fraction:

а) $\dfrac{2 - \dfrac{1}{\frac{1}{2} + \frac{1}{4}}}{2 + \dfrac{1}{\frac{1}{2} + \frac{1}{4}}}$

12. I have 120 candies and I gave 35% of my candies to a friend. How many candies do I have now?

13. In a department store, there was a sale offering 25% off on everything. What did I pay for the dress, if it's price before the sale was $80? How much this dress would cost if an additional 30% discount could be applied?

14. On the island of knights and knaves, you are approached by two people. The first one points to the second and says, "he is a knave." The second one then says, "neither of us are knaves."

    What are they actually?

    Hint: On many of these puzzles, especially the harder ones going forward, it will be important to label everyone. So A says, "B is a knave." And B says, "neither A nor B are knaves."