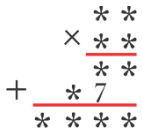
Math 5a, homework 5.

1. Can you find out which numbers are multiplied?



2. Write number 111 in binary system.
3. Write number 111_2 in decimal system.

4. Two people simultaneously set out from A to B. The first one rode a bicycle, while the second one traveled by car at a speed five times greater than the first. Halfway to the destination, the car experienced an accident, and the motorist continued the remaining journey on foot at a speed half that of the bicyclist. Who arrived in B first? Can you say, not only who's the fastest, but also how much faster he is.

5. To bake 100 pancakes, Mom needs 30 minutes, while Dad needs 40 minutes. Son can eat 100 pancakes in an hour. Mom and Dad continuously make pancakes without stopping, while Son continuously eats them. After how much time from the beginning of this process will there be exactly 100 pancakes on the table?

6. Write a 4-digit number, each digit 1 more than the previous digit (like 2345). Then write the 4-digit number with the same digits but in opposite order (like 5432). Subtract the smaller number from the greater one. Do it two more times using different digits. What did you notice? Can you explain it?

7. Solve the equations:

$a.\ \ \frac{3}{4}+\left(\frac{5}{8}+t\right)=\frac{11}{12}+\frac{7}{8};$ $\qquad b.\ \ \left(\frac{4}{5}-k\right)-\frac{1}{3}=\frac{1}{6}-\frac{1}{10}$

8. Use the distributive property and simplify fractions:

$a.\ \ \frac{15\cdot 9-15\cdot 6}{9\cdot 30};$ $\quad b.\ \ \frac{17\cdot 4+17\cdot 9}{34\cdot 52};$ $\quad c.\ \ \frac{18\cdot 7+18\cdot 3}{1200};$ $\quad d.\ \ \frac{24\cdot 11-24\cdot 3}{300}$