MATH 4: Homework 25
Due May 5, before the start of the class

Homework must be submitted on time—at least 15 minutes before the start of the class.
Homework will not be graded after the solutions are posted on Google Classroom.

Write the answers on separate sheets of paper, not between the lines.

1. There are socks of three different colors - blue, white, and black - mixed up in a drawer. If you reach into the drawer without looking, what is the minimum number of socks you need to pull out to guarantee that you have at least two socks of the same color?

2. The car plate numbers in NY have 3 letters coming first and 4 numbers at the end. The letters and numbers can repeat. How many car plates can be issued before the need to change the car plates?

3. In Illinois, the car plates start with 2 letters followed by 5 numbers. Compared to NY, are there more or fewer car plates that can be issued in IL?

4. Open the parenthesis and simplify. Draw and label a picture as we did in class to check that you included all terms (rectangles). A minus sign means subtract the area.
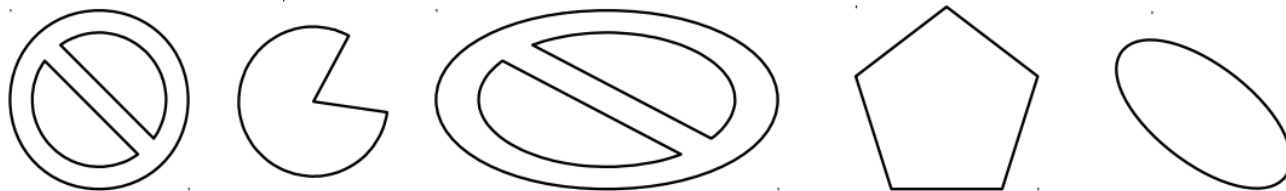
   a. $(x + 3) \cdot (2x + 5) =$

   b. $(x - 3) \cdot (2x + 5) =$
   c. $(3 + x)(4x + a) =$
   d. $(3 + x)(4x - a) =$

5. How many lines can you draw on top of each shape so that when you fold the shape along the line, the two folded parts will match? Such lines are known as lines of symmetry.

6. Solve the equations:

a) $5 + 2x = 1$

b) $|5 + 2x| = 1$ Remember the absolute value of $|a| = |-a| = a$

c) $\frac{1}{5} \cdot x = 8$