Algebra and Geometry 1. Homework 4.

1. Find the GCF and LCM for the following prime factorized numbers:

   a. $a = 2 \cdot 3 \cdot 5 \cdot 5 \cdot 5 \cdot 13, \quad b = 2 \cdot 2 \cdot 2 \cdot 5 \cdot 5 \cdot 7$
   b. $a = 3 \cdot 3 \cdot 7, \quad b = 2 \cdot 2 \cdot 5 \cdot 7, \quad c = 2 \cdot 5 \cdot 5 \cdot 7 \cdot 19$
   c. $a = 3 \cdot 3 \cdot 5 \cdot 7, \quad b = 2 \cdot 2 \cdot 2 \cdot 2 \cdot 5, \quad c = 2 \cdot 2 \cdot 2 \cdot 3 \cdot 17$

2. Is the number a is divisible by number b?

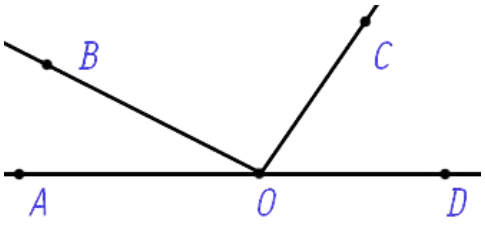
   a. $a = 2 \cdot 2 \cdot 3 \cdot 3 \cdot 5 \cdot 19 \cdot 23, \quad b = 2 \cdot 3 \cdot 3 \cdot 19$
   b. $a = 2 \cdot 2 \cdot 2 \cdot 3 \cdot 3 \cdot 5 \cdot 11 \cdot 13, \quad b = 1000$
   c. $a = 3 \cdot 5 \cdot 7 \cdot 11 \cdot 13 \cdot 17, \quad b = 1001$

3. "Sweet Mathematics" chocolate candies are sold in 12 pieces per box, and "Geometry with Nuts" are sold by 15 pieces per box. What is the smallest number of boxes of both types of chocolates you need to buy so that the two chocolates are equally divided?
4. *Prove that the number

   $$\underbrace{222 \ldots 22}_{222\ times}$$

   Is not divisible by 4.
5. On a segment [AB] points P and M are marked. Point M lies between A and P, point P is a center of the segment [BM]. Draw a picture, find the length of the segment [AM], if the length of [AP]=6cm, [BP]=5 cm.

6. Draw angles with the measures $30°, 135°, 45°$. Use ruler and protractor.
7. 3 lines intersect at 1 point and form 6 angles. One is 44°, another is 38°. Can you find all other angles? Draw the picture. Use protractor and ruler.
8. Right angle is divided into 3 angles by 2 rays. One angle by 20° more than the other and by 20° less the third one. What are the measures of these 3 angles?
9. On the picture below ∠BOD = 152°, ∠COD = 55°, angle ∠AOD is a straight angle. Find the measures of all other angles on the picture.



10. *On a line mark two points. How many segments were formed? Add one point. How many segments are there now? Add one more point. How many segments are there now? How many segments 6 points will form on the line? 10? 99?