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- 1 Three friends A, B and C have a total of 120 kroner. First, A gives as much money to B as B already has. Next, B gives as many money to C that C already has. In the end, C gives the same amount of money to A as A now has. After these transactions, A, B and C have equal amounts of money. How many money did each of the three companions have originally?

- 2 A rectangular piece of paper has the side lengths 12 and 15. A corner is bent about as shown in the figure. Determine the area of the gray triangle.

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- 3 Determine all real solutions x, y to the system of equations

$$\begin{cases} x^2 + y^2 = 1 \\ x^6 + y^6 = \frac{7}{16} \end{cases}$$

- 4 In triangle ABC , points D, E , and F intersect one-third of the respective sides. Show that the sum of the areas of the three gray triangles is equal to the area of middle triangle.

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- 5 In a cardboard box are a large number of loose socks. Some of the socks are red, the others are blue. It is stated that the total number of socks does not exceed 1993. Furthermore, it is stated that the probability of pulling two socks from the same color when two socks are randomly drawn from the box is $1/2$. What is according to the available information, the largest number of red socks that can exist in the box?