

Algebra and Geometry 1. Homework 15.



- Peter, John and Robert were eating a cake on Sunday. For breakfast Peter ate 40% of the cake, and Robert ate 150 g., For lunch John ate 30% of the leftover and plus 120g. Finally, cat Mathilda licked 90g of crumbs from the cake. What mass was the cake originally?
- Three pirates shared a bag of coins. The first one took $\frac{3}{7}$ of all the coins, the second - 51% of the balance, after which the third was left with 8 coins less than the second one received. How many coins were in the bag?
- Bring the following fractions to a common denominator and add them.

Examples:

$$1. \quad \frac{2x}{3x+6} + \frac{5}{x+2} = \frac{2x}{3(x+2)} + \frac{5}{x+2} = \frac{2x}{3(x+2)} + \frac{15}{3(x+2)} = \frac{2x+15}{3x+6}$$

$$2. \quad \frac{x}{x-2} + \frac{1}{2-x} = \frac{x}{x-2} - \frac{1}{x-2} = \frac{x-1}{x-2}$$

$$a. \quad \frac{4x}{x-1} + \frac{2-7x}{1-x};$$

$$b. \quad \frac{15}{2x-8} + \frac{7}{x-4};$$

$$c. \quad \frac{x}{3x-\frac{x^2}{3}} + \frac{4}{3-\frac{x}{5}};$$

$$d. \quad \frac{4}{4+6x} + \frac{5x}{9x+6};$$

- Write as a polynomials:

$$a. \quad (x+2)(x-2);$$

$$b. \quad (x+2)(x+2)^2;$$

$$c. \quad (x+2)(x-y+xy);$$

- Factorize:

Example:

$$(3x+3y) - (ax+ay) = 3(x+y) - a(x+y) = (x+y)(3-a)$$

$$a. \quad a(m+n) + (2m+2n);$$

$$b. \quad (ma-mb) + (a-b);$$

$$c. \quad (3x-6y) - (2y-x);$$

$$d. \quad a(x+y) + x+y;$$

$$e. \quad 2ax - bx + 2(b+2a)$$

- How should be tied a goat to be able to graze the grass inside the shape

