school nova™

1. A farmer has a cow, a goat, and a goose. The cow and the goat will eat all the grass on his meadow in 45 days, the cow and the goose will eat all the grass on the same meadow in 60 days, and the goat and the goose will eat all the grass on the meadow in 90 days. How many days will it take them altogether to eat all the grass on the meadow? (We assume that new grass is not growing.)

2. Two pedestrians left simultaneously from two villages towards each other. One pedestrian can cover the entire distance in 3 hours, and the other in 6 hours. In how many hours will they meet?

3. Write down all values of n (n is a natural number) for which the given fraction will be proper.

   a. $\dfrac{n}{5}$;

   b. $\dfrac{n-1}{7}$;

   c. $\dfrac{n+3}{8}$;

   d. $\dfrac{2n}{11}$

4. A serving of fruit ice cream weighing 25 g contains 0.001 g of vitamin C. The daily requirement of the body for this vitamin is 0.075 g. Is it enough to eat 1 kg of ice cream per day to meet the body's daily vitamin C requirement?

5. Write the expression to solve the problem, then solve it for the given values of the variables.
   Example: There are p textbooks in the first box. In the second box, there are 84 more textbooks than in the first. How many times more textbooks are there in the second box than in the first? (Given: $p = 42$)

   $$\frac{p+84}{p} = \frac{42+84}{42} = 3$$

   a. There are s students in the fourth grade. In the fifth grade, there are 35 more students. How many students are there in both grades altogether? (Given: $s = 125$)

   b. There are b cherry turnovers in the bakery shop and three times as many apple turnovers. How many fewer cherry turnovers are there than apple turnovers? (Given: $b = 15$)

6. Compare by representing fractions as decimals:

a. $\dfrac{1}{2}$ and 0.55; b. $\dfrac{3}{25}$ and 0.15; c. $\dfrac{1}{8}$ and 0.12;

d. 0.75 and $\dfrac{3}{4}$; e. $\dfrac{7}{20}$ and 0.35; f. $\dfrac{1}{125}$ and 0.01;

7. Compare by representing decimals as fractions:

a. $\dfrac{1}{6}$ and 0.2; b. $\dfrac{1}{3}$ and 0.3; c. $\dfrac{2}{3}$ and 0.75;

d. 0.1 and $\dfrac{1}{9}$; e. $\dfrac{5}{7}$ and 0.7; f. 0.8 and $\dfrac{5}{6}$;