Math 5b, homework 9.

1. Evaluate the following using decimals:

   $a.\ 0.36+\frac{1}{2};\qquad b.\ 5.8-\frac{3}{4};\qquad c.\ \frac{2}{5}:0.001;\qquad d.\ 7.2\cdot\frac{1}{1000}$

2. Evaluate the following using fractions:

   $a.\ \frac{2}{3}+0.6;\qquad b.\ 1\frac{1}{6}-0.5;\qquad c.\ 0.3\cdot\frac{5}{9};\qquad d.\ \frac{8}{11}:0.4;$

3. Write as a fraction

   $a.\ 0.\overline{4},\qquad b.\ 0.4,\qquad c.\ 0.\overline{6},\qquad d.\ 0.6,\qquad e.\ 0.1\overline{2},\qquad f.\ 0.\overline{12},\qquad g.\ 0.12$

4. The sorcerer used seaweed and mushrooms in a ratio of 5 to 2 when brewing a potion. How much seaweed does he need if there are only 450 grams of mushrooms?

5. A farmer has a cow, a goat, and a goose. The cow and the goat together can eat all the grass on his meadow in 45 days, the cow and the goose can eat all the grass on the same meadow in 60 days, and the goat and the goose can eat all the grass on the meadow in 90 days. How many days will it take all three of them together to eat all the grass on the meadow? (Assuming that new grass is not growing).

6. The mass of a chicken egg is 80 g. The egg white makes up 55% of the total mass, and the yolk is 75% of the mass of the egg white. Find the mass of the eggshell.

7. A freight train left the station at a speed of 56 km/h. Two hours later, a passenger train departed from the same station in the same direction at a speed of 84 km/h.

   a. How far apart will the trains be 1 hour 30 minutes after the passenger train departs?
   b. How long after its departure will the passenger train catch up with the freight train?

8. Evaluate (answer is 8):

$$\left(\frac{12-\left(2\frac{1}{2}\cdot 3+9:5\right)}{\left(1\frac{7}{8}+2\frac{11}{12}\right):3\frac{5}{6}+0.1}\right)^{3}$$