Math 5b: Classwork & Homework 5

1. Compute the following:

(a) $5 \div 7\frac{1}{2}$ (b) $(2 - 3.5) \times \frac{3}{5}$ (c) $3\frac{2}{11} \div \frac{5}{7}$

2. Simplify the following expressions:

(a) $x + 4(1 - x)$ (b) $2 + 5x - 4(3 - x)$ (c) $5(x - 1) - 3(2x + 1)$

(d) $x - \frac{4}{5}(1 - x)$ (e) $(\frac{2}{3}x + 1) \div \frac{6}{7}$ (f) $(2 \div (3 \div x - 1))$

3. Solve the following equations:

(a) $\frac{3}{4}x = 12$ (b) $\frac{1}{2}x + \frac{1}{7}x = 18$

(c) $\frac{2}{3}(x + 7) = 12$ (d) $2.1x + \frac{1}{5}x + 1 = 47$

4. John bought a large bag of red, green, and blue candies for Hallowe'en, 74 candies in all. The number of red candies is one less than the number of green candies, and there are as many blue candies as red and green together. How many pieces of candy of each color are there?

5. A boy had a bag of apples. He gave $\frac{1}{2}$ of them to his parents, $\frac{1}{5}$ to his brother, $\frac{1}{4}$ to his sister and the last apple he ate himself. How many did he originally have?

6. Right now, Jane is 5 and her father is 42. In how many years will he be twice as old as she? Three times as old? (Hint: denote the number of years by x and write an equation for x.)

7. A hot water tap fills the bath in 5 minutes. The cold water tap fills the bath in 3 minutes. With both taps open, how long will it take to fill the bath?

8. A watermelon is 99% water (by weight). A watermelon jelly is 98% water (by weight). How much water does one have to evaporate from a 1kg watermelon to turn it into jelly?

9. The numbers 1,2,…,10 are written in a row. Is it possible to put signs + and – between them so that the result is equal to zero?

10. Using the distributive property, to open brackets, and the commutative law for multiplication ($ab = ba$), to recognize similar terms, simplify:

(a) $4a(b + ac) - c(5a^2 - 2) + 7ab =$

(b) $6a(14a + 9) + 7(3a + 15) =$