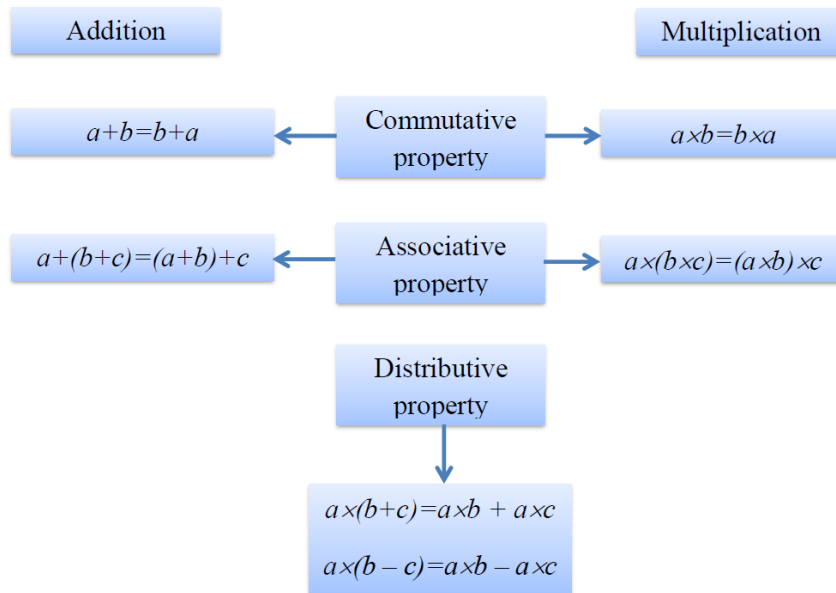


Math 5b: Classwork & Homework 7

November 3, 2019

Reminder:



1. Simplify the following expressions:

(a) $2\left(x - \frac{2}{3}\right) - \left(x + \frac{1}{2}\right) =$ (b) $\frac{1}{x} + \frac{1}{x+1} =$ (c) $1.5x^2 - 0.5(x - 1)(x + 1) =$

(d) $\frac{3}{a} + \frac{b+2}{b-1} =$ (e) $\frac{5}{6} + \frac{c-2}{3a} =$ (f) $\frac{9}{d+1} + \frac{a-3}{d*(d+1)} =$

2. Solve the following expressions:

(a) $\frac{3}{4}(x + 8) = 10$ (b) $\frac{1}{2}(x + 1) = x - 3$ (c) $\frac{1}{2}x + \frac{1}{3}x = x - \frac{1}{12}$

3. If you take half my age and add 7, you get my age 13 years ago. How old am I?

4. One can measure temperature using either the Fahrenheit scale (common in the US and Britain) or the Celsius scale (in most other countries). The relation between the two is given by:

$$C = \frac{5}{9}(F - 32)$$

(C in the temperature in Celsius, F in Fahrenheit)

(a) Is there a temperature which gives the same value on both scales? (i.e. $F = C$)

(b) Is there a temperature which in Fahrenheit scale is twice as large as in Celsius? (i.e. $F = 2C$)

5. Solve the following:

(a) $2 \div \frac{1}{3} + \frac{1}{3} \div 2 + \frac{5}{6} =$

(b) $\frac{3}{8} \div \left(5\frac{11}{28} - 3\frac{1}{7}\right) =$

(c) $-3.2 - (-1.2 - 3.2) + (5.8 - 0.17) =$

6.

(a) One bookshelf has 70 books and a second has 36. How many books should you move from the first to the second shelf to have an equal number of books on each shelf?

(b) Can you solve the same problem with 70 books on the first shelf and 35 books on the second?

7. A car costs \$12,000 more than a motorbike. The same car is 4 times as expensive as the motorbike. How much does the motorbike and the car cost?

8. Mrs. Weatherby baked 175 cookies for a party. The children ate $\frac{4}{7}$ of the cookies. The adults ate 48 cookies. How many cookies were left?

9. There are 4 short stories in a book. The first story is 12 pages long, which is $\frac{2}{3}$ of the second story. The third story is $\frac{5}{6}$ of the length of the first two stories together. How long is the fourth story, if four stories together occupy 64 pages in the book?

10*. Imagine we have 2019 coins one of which is counterfeit and therefore its weight is different than that of the other ones. We also have a weighing balance scale that can show us whether one group of coins is heavier or lighter than the other. If we can use the balance scale only twice, can we always determine whether the counterfeit coin is lighter or heavier than the good ones?

