

Math 5b, homework 9.



1. The relationship between two variables is given in the table below. Is this relationship proportional? If so, what is the constant of proportionality?

a.

x	9	15	33	45	66
y	3	5	11	15	22

b.

x	3	2	5	4	6
y	9	4	25	16	36

c.

x	3	2	1	$\frac{1}{3}$	30
y	1	$\frac{3}{2}$	3	9	0.1

2. Anna drove her car 345 miles and used 15 gallons of gasoline. At the same rate, how many miles could she drive her car using 35 gallons of gasoline? Set up and solve a proportion.

3. Solve the following equations (hint: use the property of proportions):

a. $\frac{x}{7.2} = \frac{1\frac{1}{9}}{0.25}$; b. $\frac{2\frac{1}{3}}{0.6x} = \frac{2.5}{1\frac{2}{7}}$; c. $\frac{7}{12} = \frac{50x}{4.8}$; d. $\frac{1\frac{3}{17}}{13.75} = \frac{2\frac{2}{11}}{3x}$

4. 6 oxen or 8 cows can graze a field in 28 days. How long would 9 oxen and 2 cows take to graze the same field?

5. 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?

6. Simplify the following expressions (combine like terms):

a. $7a + (2a + 3b)$;

b. $9x + (2y - 5x)$;

c. $(5x + 7a) + 4x$;

d. $(5x - 7a) + 5a$;

e. $(3x - 6y) - 4y$;

f. $(2a + 5b) - 7b$;

g. $3m - (5n + 2m)$;

h. $6p - (5p - 3a)$;

7. John time of the driving to work usually is 1 hour and 20 minutes. Yesterday was a bad weather and John reduced his speed by 10 km/h and reached his work in 1.5 hours. What is the distance between John's house and his work?