

**Math 01, Homework 9 on Sections 5.1 - 5.5**  
**Extra Credit.**

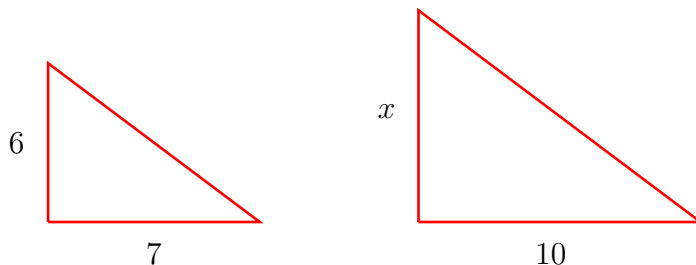
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Write all your working out and answers on your own notepaper - no need to write the questions. Please use lots of space. It is very important that you show clearly any work you had to do to get your answers. Just writing the answer down with no work shown is not enough. Every question is worth 2 points.

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*The solutions to these first 10 questions are on page 2. Check that you get the same answers. If you don't, then look at your notes or the book or ask me. Only do the last eight questions when you are sure you understand the first ten.*

- (1) Simplify the ratios:   **(a)** 20 to 15    **(b)** 100 minutes to 3 hours
- (2) Simplify the ratio:     $1\frac{5}{8}$  to  $3\frac{1}{4}$
- (3) Solve the proportion:     $\frac{22}{x} = \frac{4}{10}$
- (4) Solve the proportion:     $\frac{x}{7} = \frac{3}{14}$
- (5) What is 1% of 3200?
- (6) 12 is 40% of what number?
- (7) 90 is what percent of 200?
- (8) Maya used 7 gallons of gas to drive 240 miles. How far can she drive with 3 gallons? (Write the answer as a mixed number of miles.)
- (9) In a sample of 600 bottles, 11 were found to be leaking. Approximately how many bottles would you expect to be leaking in a sample of 20,000 bottles? (Write the answer as a mixed number or a decimal rounded to the nearest tenth.)
- (10) For these similar triangles,  $\triangle ABC$  and  $\triangle DEF$ , find the length of the missing side.



Eight more questions. Show clearly all your working out and reasoning.

(11) Simplify the ratios:   **(a)** 18 to 21    **(b)** 4 dollars to 80 cents

(12) Simplify the ratio:  $4\frac{1}{5}$  to  $10\frac{1}{2}$

(13) Solve the proportion:  $\frac{8}{12} = \frac{A}{21}$

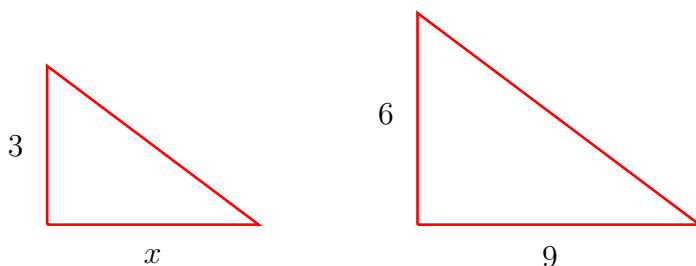
(14) Solve the proportion:  $\frac{x}{16} = \frac{3}{5}$

(15) 80 is 80% of what number?

(16) What percent of 250 is 5?

(17) On a map, 2 inches represents 25 miles. If two towns are 5 inches apart on the map, what is the real distance between them?

(18) For these similar triangles,  $\triangle ABC$  and  $\triangle DEF$ , find the length of the missing side.



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**Answers to questions (1)-(10):**

(1)   **(a)** 4 : 3    **(b)** 5 : 9

(2)    1 : 2

(3)     $x = 55$

(4)     $x = 3/2$

(5)    32 is 1% of 3200

(6)    12 is 40% of 30

(7)    90 is 45% of 200

(8)    She can drive  $102\frac{6}{7}$  miles.

(9)    You would expect  $366\frac{2}{3}$  bottles to be leaking (or 366.7 rounded to nearest tenth).

(10)     $x = 8\frac{4}{7}$