A1 w4d3 2-7 & 2-8 Proportions & Similar Figures

Alg 1 Warm Up Block Day

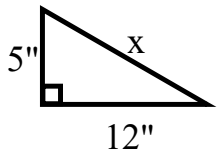
Questions 1-3: Skill 1. Solve each equation. If the equation is an identity, write *identity*. If it has no solution, write *no solution*.

1. $2(3x-6)=3(2x-4)$

2. $-(b+3)+4b=4(2b-1)-b+1$

3. $3(g-1)+7=3g+4$

4. Find the missing side of the triangle, using the Pythagorean theorem



2-7 Solving Proportions Notes & examples

1. $\frac{b}{6} = \frac{4}{5}$

2. $\frac{4}{3} = \frac{68}{x}$

3. $\frac{b-8}{5} = \frac{b+3}{4}$

4. $\frac{n}{5} = \frac{2n+4}{6}$

Write a proportion to represent the situation, and solve the proportion to answer the question:

5. A band went to a recording studio and recorded 4 songs in 3 hours. How long would it take the band to record 9 songs if they record at the same rate?

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Practice Makes Perfect

Use *cross-products* to solve each *proportion* for the indicated variable. See if you can recognize the distributive property as you work through some of these problems. Show all of your work.

1. $\frac{x}{3} = \frac{5}{9}$

$(x)(9) = (3)(5)$

2. $\frac{y}{7} = \frac{3}{14}$

3. $\frac{2}{w+2} = \frac{2}{2w+1}$

$2(2w + 1) = 2(w + 2)$

4. $\frac{2n+1}{2} = \frac{n+2}{4}$

5. $\frac{b+2}{3} = \frac{3b+1}{3}$

6. $\frac{3}{2z} = \frac{5}{z+3}$

7. $\frac{d+4}{3} = \frac{d+13}{6}$

8. $\frac{3}{m+1} = \frac{7}{2m+3}$

9. $\frac{n+12}{4} = \frac{n}{16}$

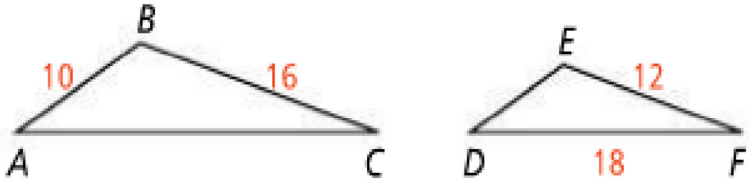
10. $\frac{a+2}{5} = \frac{a-4}{7}$

Scrambled answers: -17, -16, 2 , 0, $\frac{1}{2}$, $\frac{9}{7}$, 5, $\frac{3}{2}$, $\frac{5}{3}$, 1

2-8 Proportions and Similar Figures
Notes & examples

Similar figures have the same shape but are different sizes. You can use proportions to find missing side lengths in similar figures.

1. In the diagram, $\triangle ABC \sim \triangle DEF$. How long is DE?



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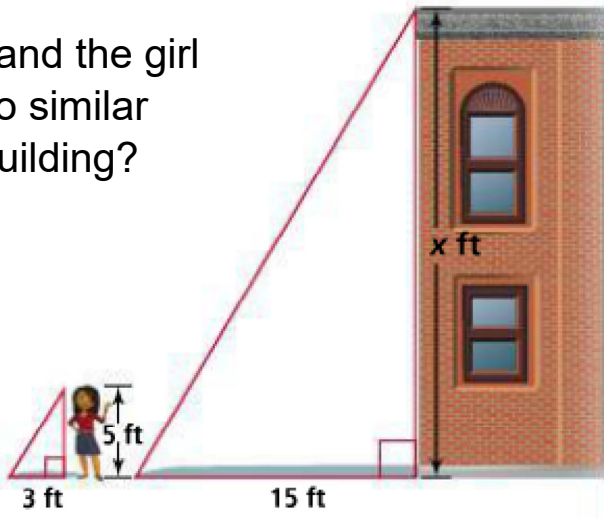
2. The sun's rays strike the building and the girl at the same angle, forming the two similar triangles shown. How tall is the building?



3. The scale of a map is 1 cm : 75 km. What is the actual distance between two towns that are 12 cm apart on the map?

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HW p 127: 19, 25, 29, 33, 34

Solve each proportion using the Cross Products Property.

19. $\frac{15}{a} = \frac{3}{2}$

25. $\frac{2}{-5} = \frac{6}{t}$

Solve each proportion using any method.

29. $\frac{2c}{11} = \frac{c-3}{4}$

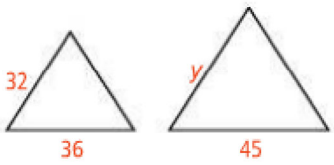
33. $\frac{c+1}{c-2} = \frac{4}{7}$

34. Gardening A gardener is transplanting flowers into a flowerbed. She has been working for an hour and has transplanted 14 flowers. She has 35 more flowers to transplant. If she works at the same rate, how many more hours will it take her?

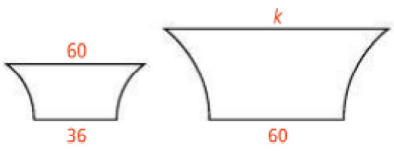
p 134: 9, 11, 13, 17, 18

The figures in each pair are similar. Find the missing length.

9.



11.



The scale of a map is 1 cm : 15 km. Find the actual distance corresponding to each map distance.

13. 2.5 cm

17. Movies A professional model-maker is building a giant scale model of a house fly to be used in a science fiction film. An actual fly is about 0.2 in. long with a wingspan of about 0.5 in. The model fly for the movie will be 27 ft long. What will its wingspan be?

18. Maps Abbottsville and Broken Branch are 175 mi apart. On a map, the distance between the two towns is 2.5 in. What is the scale of the map?