

7.8c

Name (print first and last) \_\_\_\_\_ Per \_\_\_\_\_ Date: 3/12 due 3/13

7.8c Similarity: Applications and Proof CHALLENGES

Geometry Regents 2013-2014 Ms. Lomac

SLO: I can prove that a pair of triangles are congruent by SSS~, SAS~, or AA~.

(1)  Use similar triangles to answer each question.

CONNECT the words of each problem to the diagram for the problem by underlining, circling, or using color.

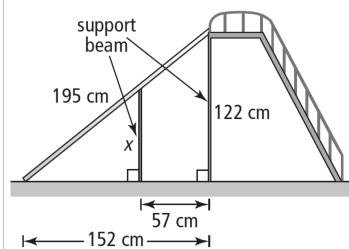
LOCATE a pair of similar triangles

USE the diagram to setup and solve a proportion.

ANSWER the question with a sentence that restates the question.

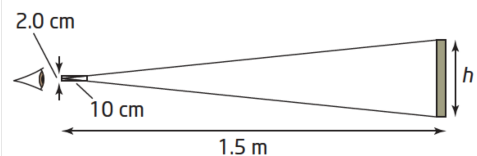
(a)

Sara was helping her father assemble a slide for the local park. He decides to reinforce the slide with an extra support beam. How long should the extra support beam be?



(b)

While looking through a cylindrical tube, Rita moves to a point where the height of a picture just fits within her field of view, as shown.



Rita is standing 1.5 m from the picture. The length and diameter of the viewing tube are as shown. Find the height of the picture.

(c)

A triangle with side lengths 5, 11, and 15 is similar to another triangle with longest side of length 24. What is the perimeter of the larger triangle?

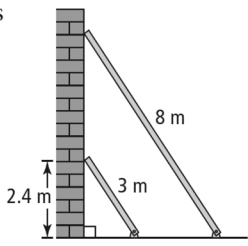
(d)

Suppose a person is 300 cm from a camera lens, and the film is 1.3 cm from the lens. If the person is 180 cm tall, how tall is his image on the film?

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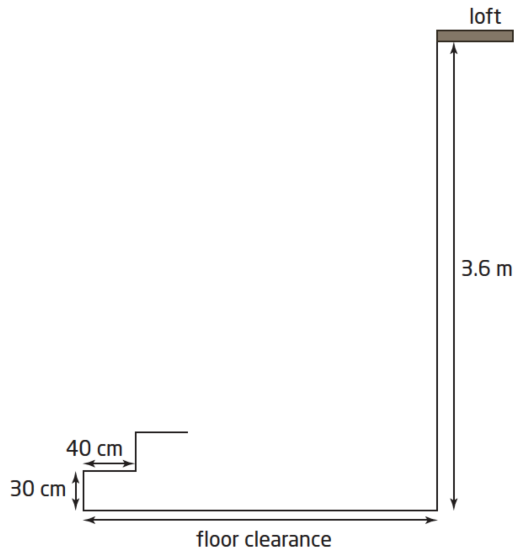
(e)

Two extension ladders are leaning at the same angle against a vertical wall. The 3-m ladder reaches 2.4 m up the wall. How much farther up the wall does the 8-m ladder reach?



(f)

Carol is building a staircase from the floor of her barn to the loft, which is 3.6 m above the floor. She is using steps that are each 30 cm high and 40 cm deep.



- a) How much floor clearance will Carol need in order to fit the staircase?
- b) How many steps will be required?

(g)

Campsites  $T$  and  $U$  are on opposite sides of a lake. A survey crew made the measurements shown on the diagram. What is the distance between the 2 campsites?

