

## Lesson 3-5: Proportions and Similar Figures

### Part 2: Indirect Measurement and Scale Drawings

1. 080201a, P.I. A.A.26  
On a map, 1 centimeter represents 40 kilometers. How many kilometers are represented by 8 centimeters?  
[A] 5      [B] 48      [C] 280      [D] 320
2. 010818a, P.I. A.A.26  
On a map, 1 inch represents 3 miles. How many miles long is a road that is  $2\frac{1}{2}$  inches long on the map?  
[A]  $7\frac{1}{2}$       [B]  $5\frac{1}{2}$       [C]  $6\frac{1}{2}$       [D]  $\frac{1}{2}$
3. 080603a, P.I. A.A.26  
Jordan and Missy are standing together in the schoolyard. Jordan, who is 6 feet tall, casts a shadow that is 54 inches long. At the same time, Missy casts a shadow that is 45 inches long. How tall is Missy?  
[A] 5 ft 6 in      [B] 5 ft  
[C] 38 in      [D] 86.4 in
4. 080223a, P.I. A.A.26  
An image of a building in a photograph is 6 centimeters wide and 11 centimeters tall. If the image is similar to the actual building and the actual building is 174 meters wide, how tall is the actual building, in meters?
5. 060124a, P.I. A.A.26  
If a girl 1.2 meters tall casts a shadow 2 meters long, how many meters tall is a tree that casts a shadow 75 meters long at the same time?
6. 010222a, P.I. A.A.26  
A 12-foot tree casts a 16-foot shadow. How many feet tall is a nearby tree that casts a 20-foot shadow at the same time?

[1] D

[2] A

[3] B

[2] 319, and appropriate work is shown.

[1] A correct proportion is shown, but no solution or an incorrect solution is found.

or [1] An incorrect proportion of equal difficulty is solved appropriately.

or [1] Appropriate work is shown, but one computational error is made.

or [1] 319, but no work is shown.

[0] A zero response is completely incorrect, irrelevant, or incoherent or is a correct response that was obtained by an obviously

[4] incorrect procedure.

[2] 45, and appropriate work is shown, such

as a diagram or  $\frac{1.2}{2} = \frac{x}{75}$ .

[1] Appropriate work is shown, but no answer or an incorrect answer is found.

or [1] 45, but no work is shown.

[0] A zero response is completely incorrect, irrelevant, or incoherent or is a correct response that was obtained by an obviously

[5] incorrect procedure.

[2] 15, and any equivalent proportion, equation, or fraction conversion is shown,

such as  $\frac{12}{16} = \frac{x}{20}$ .

[1] An appropriate proportion, equation, or fraction conversion is shown, but one computational or conceptual error is made.

or [1] An incorrect proportion, equation, or fraction conversion is shown, but an appropriate answer is found for the incorrect proportion.

or [1] 15, but no work is shown.

[0] A zero response is completely incorrect, irrelevant, or incoherent or is a correct response that was obtained by an obviously

[6] incorrect procedure.