Practice Test

Math 9 | Scale and Similar Triangles Practice Test /35 | Name: _____

1. Convert each unit of measurement. [3]

a) 1 km = 1000 m b) 1 m = 100 cm c) 1 cm = 10 mm

2. Convert each unit of measurement. [8]

a) 200 m = 0.2 km (÷1000)

b) 50 mm = 5 cm (÷10)

c) 32 km = 32 000 m (×1000)

d) 3.8 km = 380 000 cm (km → m → cm, ×1000 ×100)

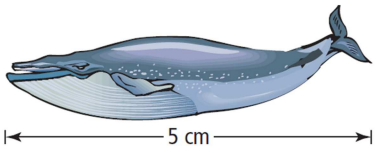
e) 47 cm = 470 mm (×10)

f) 47 cm = 0.47 m (÷100)

g) 9.1 m = 910 cm (×100)

h) 710 mm = 0.71 m (mm → cm → m, ÷10 ÷100)

3. Determine the actual length of the humpback whale if the scale is 1 : 260. [2]



1 : 260 = 5 : ____

$\frac{1}{260} = \frac{5}{x}$

$x = 5 \cdot 260 = 1300$ cm or 13 m

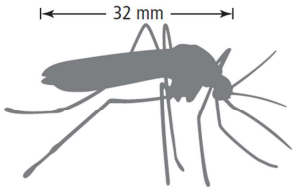
The length of the whale is 13m.

4. Determine the actual length of the mosquito if the scale is 1 : 0.4. [2]

1 : 0.4 = 32 : ____

$\frac{1}{0.4} = \frac{32}{x}$

$x = 32 \cdot 0.4 = 12.8$ mm



The length of the mosquito is 12.8 mm.

5. State the scale used to create the image of the snowboard if its actual length is 162 cm. [2]

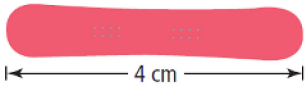


image : actual

4 : 162
÷4 ÷4

1 : 40.5

* the scale should be written with 1 as the first number

The scale is 1:40.5 .

6. The distance between two cities on a map is 5 cm. If the cities are actually 800 km apart,

a) what scale was used to create the map? [1]

800 km = 80000000 cm

km → m → cm
×1000 ×100

5 : 80000000
÷5 ÷5

1 : 16000000

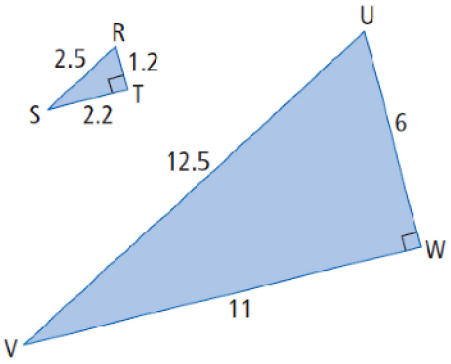
b) what is the scale factor? [1]

$\frac{1}{16000000} = 0.000000063$

7. State each pair of corresponding sides. [2]

RT and UW
SR and VU
ST and VW

∠S = ∠V
∠R = ∠U
∠T = ∠W

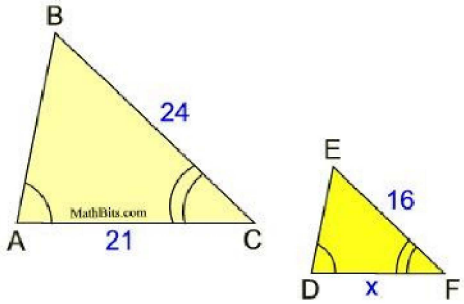


Are the triangles similar? Justify your answer. [3]

$\frac{6}{1.2} = 5$ $\frac{11}{2.2} = 5$ $\frac{12.5}{2.5} = 5$

The triangles are similar because corresponding sides are proportional.

8. Determine the value of x. [2]

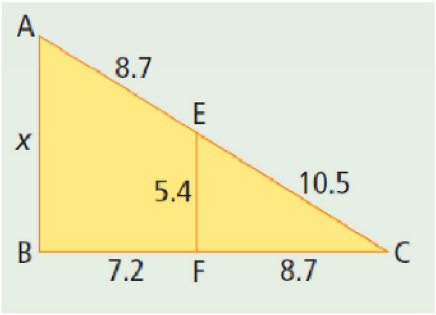


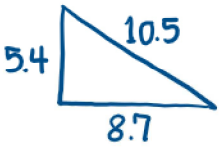
$\frac{x}{21} = \frac{16}{24}$

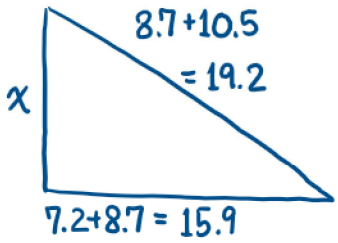
$x = \frac{16 \cdot 21}{24}$

$x = 14$

9. ΔABC is similar to ΔEFC. Determine the missing side length. Express your answer to the nearest tenth. [3]







$\frac{x}{5.4} = \frac{19.2}{10.5}$

$x = \frac{19.2 \cdot 5.4}{10.5} = 9.874285714$

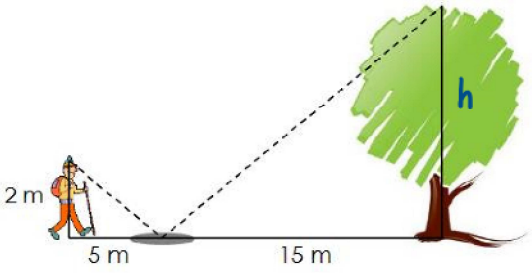
$x = 9.9$

10. A hiker can see the reflection of the top of a tree in a puddle. Determine the height of the tree. Provide a sentence answer. [2]

$\frac{h}{2} = \frac{15}{5}$

$h = \frac{15 \cdot 2}{5}$

$h = 6$



The height of the tree is 6m.

Communication:

Criteria	never	sometimes	always
Proper use of operation symbols & equal signs; units correct and included; sentence answers #3, 4, 5, 10.	0	1	2
Solutions are clear and well organized.	0	1	2