

MATH 9 - CHAPTER 4 - PRETEST

parent/guardian signature

Multiple Choice - PART 1 - NON-CALCULATOR - 10 MINUTES

Circle the choice that best completes the statement or answers the question.

1. A scale of 2:5 means
- a. there are 2 units of the image for every unit of actual size
 - b. there are 2 units of the image for every 5 units of actual size
 - c. there are 5 units of the image for every unit of actual size
 - d. there are 5 units of the image for every 2 units of actual size

2. Compare Figure B to Figure A. Figure B is

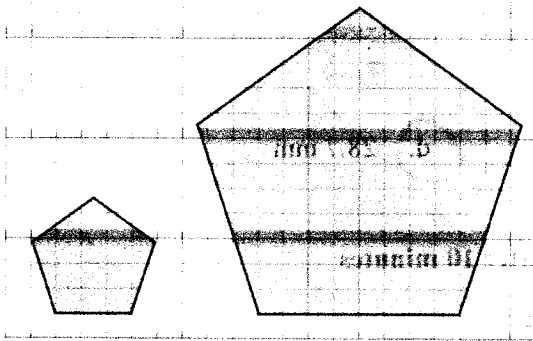
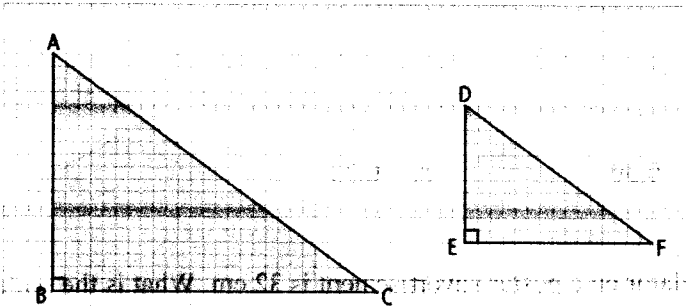


Figure A

Figure B

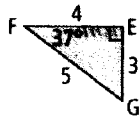
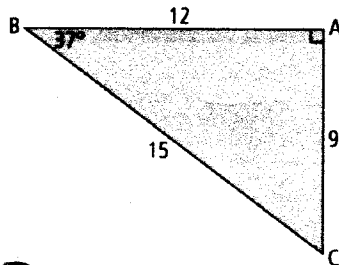
- a. an enlargement of Figure A
- b. a proportion of Figure A
- c. a reduction of Figure A
- d. a scale factor of Figure A

3. In the two triangles shown, $\angle A$ and $\angle D$ are



- a. complimentary angles
- b. corresponding angles
- c. exterior angles
- d. inscribed angles

4. $\triangle ABC$ and $\triangle EFG$ are



$$\frac{12}{4} = \frac{9}{3} = \frac{15}{5}$$

- a. similar triangles b. proportional triangles c. equal triangles d. corresponding triangles

5. A digital picture on a computer screen is 8.2 mm wide. When the picture is printed, the image enlarged by a scale of 1:3.5. What is the width of the printed picture?

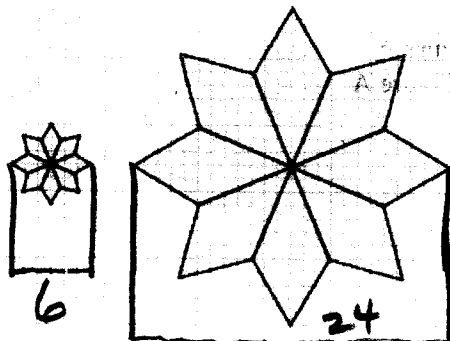
$$\frac{8.2}{?} = \frac{1}{3.5}$$

$$\begin{array}{r} 8.2 \\ \times 3.5 \\ \hline 410 \\ 246 \\ \hline 2870 \end{array}$$

- a. 2.34 mm b. 3.5 mm c. 11.7 mm d. 28.7 mm

Multiple Choice - PART 2 - CALCULATOR may be used after 10 minutes

6. Determine the scale factor used to draw Figure A from Figure B.



$$\frac{6}{24} = \frac{1}{4}$$

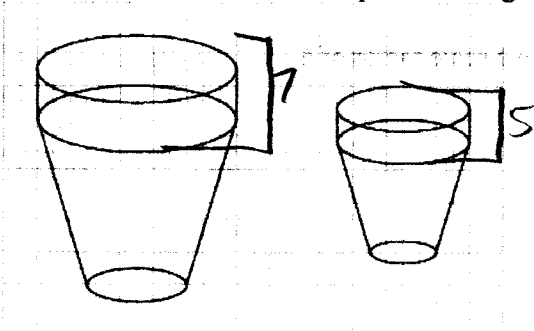
- Figure A Figure B
- a. 0.20 b. 0.25 c. 0.30 d. 0.33

7. A calculator is 12 cm long. The length of the calculator on a poster advertisement is 32 cm. What is the scale used to create the poster?

$$\frac{32}{12} = \frac{8}{3}$$

- a. 3:6
b. 3:8
c. 6:8
d. 6:3

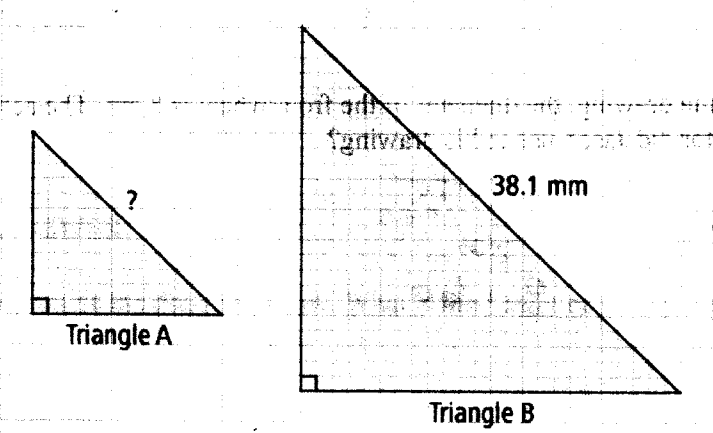
8. The scale factor of the flower pot on the right compared to the flower pot on the left is approximately



$$\frac{5}{7}$$

- a. 50% b. 60% c. 70% d. 80%

9. Triangles A and B are similar isosceles triangles, related by a scale of 1:3. If each leg of Triangle A measures 9 cm, calculate the approximate length of the hypotenuse of Triangle A.

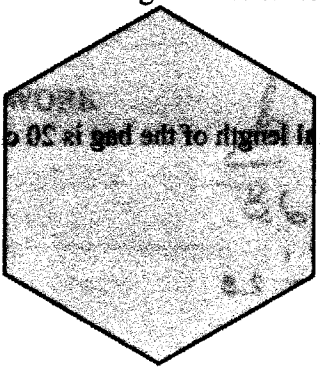


$$\frac{1}{3} = \frac{?}{38.1}$$

$$38.1 \div 3$$

- a. 12.7 mm b. 38.2 mm c. 162 mm d. 486 mm

10. This polygon has sides that are 1.5 cm each. If a similar polygon was created using a scale factor of 3, determine the side length of the similar polygon.

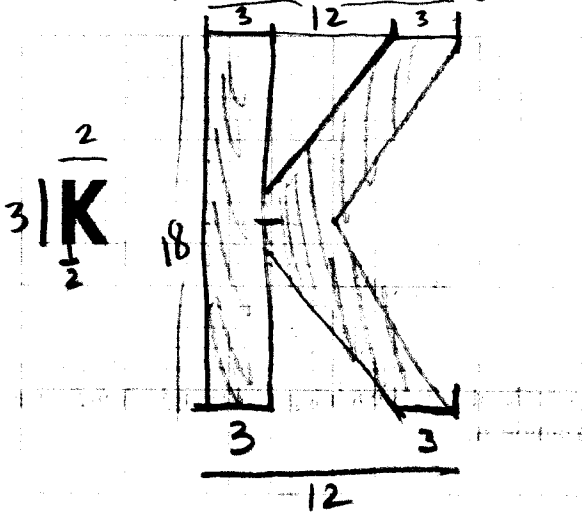


$$1.5 \times 3$$

- a. 0.5 cm b. 1.5 cm c. 3.5 cm d. 4.5 cm

Short Answer - SHOW YOUR WORK

11. Use the grid provided to draw an enlargement of the letter using a scale factor of 6.



12. Jason made a drawing of his mountain bike. In the drawing, the diameter of the front wheel is 8 cm. The actual size of the front wheel is 60 cm. What scale factor did Jason use in his drawing?

WORK $\frac{\text{diag}}{\text{act}} = \frac{8}{60} = \frac{1}{7.5}$ $1 \div 7.5$
or $8 \div 60$

ANSWER $0.1\bar{3}$

13. Laura uses a map to determine the distance between her hometown and the closest campground. On the map, this distance is 2.5 cm. The actual distance is 15 km. What is the scale used on the map?

WORK $\frac{\text{map}}{\text{actual}} = \frac{2.5}{15} = \frac{1}{6}$

ANSWER scale map $1 \text{ cm} = 6 \text{ km}$

14. Richelle designed a tote bag. In the design, the length of the bag is 8 cm. The actual length of the bag is 20 cm. What scale factor did Richelle use in her design?

WORK $\frac{\text{design}}{\text{actual}} = \frac{8}{20} = \frac{1}{2.5}$ $1 \div 2.5$
or $8 \div 20$

ANSWER 0.4

Problem: Show your work

15. The ratio of length to width of the flag of Canada is 2:1. Assume you have a flag that is 12 cm wide.

a) What are the dimensions of an image of the flag that has a scale factor of 3.5?

WORK $l = \frac{2}{1} = 2$ $l = 24$ $w = 3.5 \times 12$
 $w = 1 = 12$ $l = 24 \times 3.5$

ANSWER

$w = 42 \text{ cm}$ $l = 84 \text{ cm}$

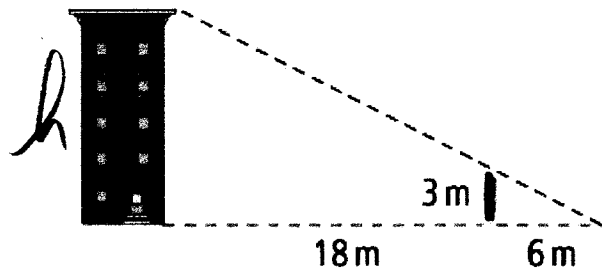
b) What are the dimensions of an image of the flag that has a scale factor of 0.75?

WORK $w = 12 \times 0.75$
 $l = 24 \times 0.75$

ANSWER

$w = 9 \text{ cm}$ $l = 18 \text{ cm}$

16. Examine the diagram below. What is the height of the building?



WORK

$\frac{h}{3} = \frac{18+6}{6}$ $\frac{h}{3} = \frac{24}{6}$
 $h = \frac{3 \times 24}{6}$

ANSWER

$h = 12 \text{ m}$