

Math 10 – Chapter 6 Review

Name: ANSWERS

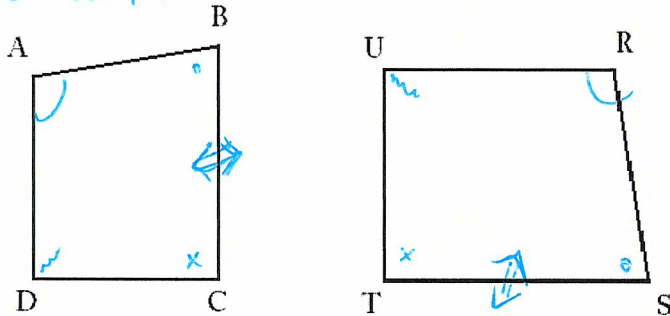
/31

$79^\circ, 81^\circ \neq 20^\circ \leftarrow 100 - 110$

1. The shape ABCD is an artistic bookend with a similar partner bookend, shape RSTU, which is slightly larger. Which side in RSTU corresponds to side BC? (1 mark)

- a. RS b. ST
c. TU d. RU

$ABCD \sim RSTU$

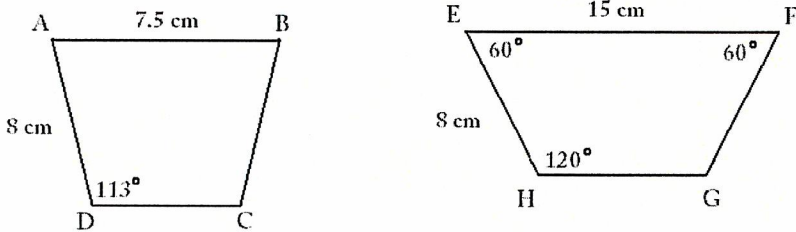


2. Veronica was asked to scale a square of quilt fabric with a side length of 30 cm using a scale factor of 25%. What is the new side length of the square? (1 mark)

- a. 5 cm b. 22.5 cm
c. 7.5 cm d. 37.5 cm

reduction
 30×0.25

3. Julio looked at the profiles of the two dessert dishes below and stated that they are not similar figures.



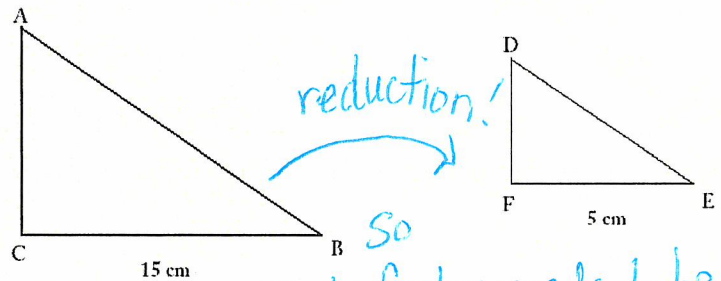
Which of the following reasons could he use alone to argue that they are not similar figures? (1 mark)

- a. Side EF is twice the size of side AB **TRUE**
b. Side AD is the same length as side EH
c. Angle D is not the same as angle H
d. Angle E is the same as angle F.

4. Two of the angles in a triangle have measure of 79° and 81° . Which of the angle measures below could belong to a triangle that is similar to this triangle? (1 mark)

- a. 81° and 80° **x**
b. 79° and 90° **x**
c. 81° and 20° **✓**
d. 79° and 21° **x**

5. Kimiko drew the two similar right triangles below when she was trying to figure out the materials she would need to repair a corner of a wooden frame.

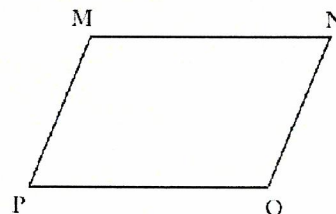
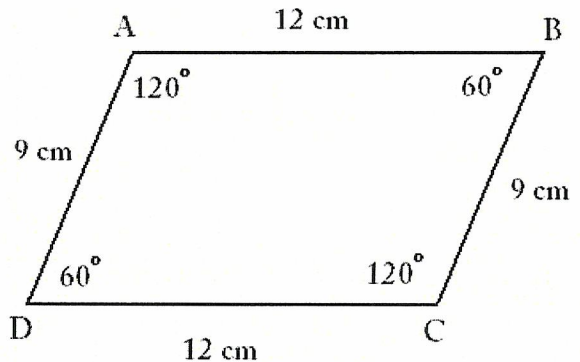


So scale factor needs to be less than 1

What scale factor did she use on ABC to create the second right triangle, DEF? (1 mark)

- a. $1/10$ c. 3
b. $1/3$ d. 10

6. The figure MNOP is similar to ABCD and was created using a scale factor of $1/3$. Use these two figures to answer the questions on the following page.



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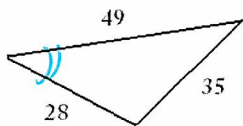
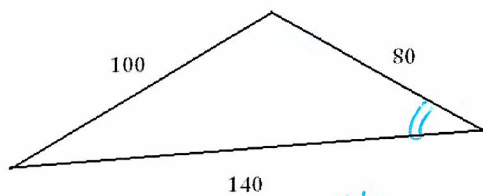
a. What is the measure of each angle? (2 marks)

- i. $M = \underline{120^\circ}$
- ii. $N = \underline{60^\circ}$
- iii. $O = \underline{120^\circ}$
- iv. $P = \underline{60^\circ}$

b. What is the length of each side? (2 marks)

- i. $MN = \underline{4 \text{ cm}}$
- ii. $NO = \underline{3 \text{ cm}}$
- iii. $OP = \underline{4 \text{ cm}}$
- iv. $MP = \underline{3 \text{ cm}}$

7. Susan drew two triangles as sketches for seasonal cookies in her bakery. Are the two triangles scaled copies of each other? Explain your calculations. (3 marks)



$$\frac{140}{49} = 2.857\dots$$

$$\frac{100}{35} = 2.857\dots$$

$$\frac{80}{28} = 2.857\dots$$

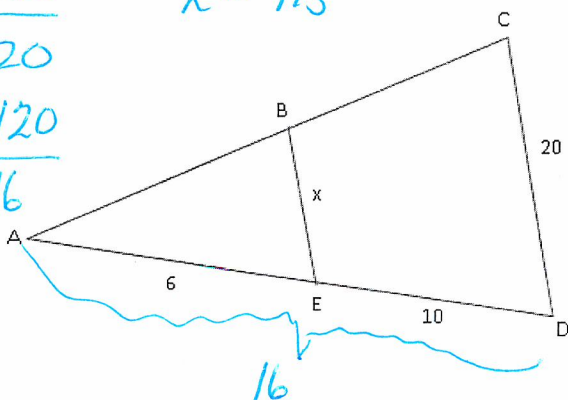
YES!!

8. Given the following diagram, solve for x. Show your work. (2 marks)

$$\frac{6}{16} = \frac{x}{20}$$

$$\frac{16x}{16} = \frac{120}{16}$$

$$x = 7.5$$

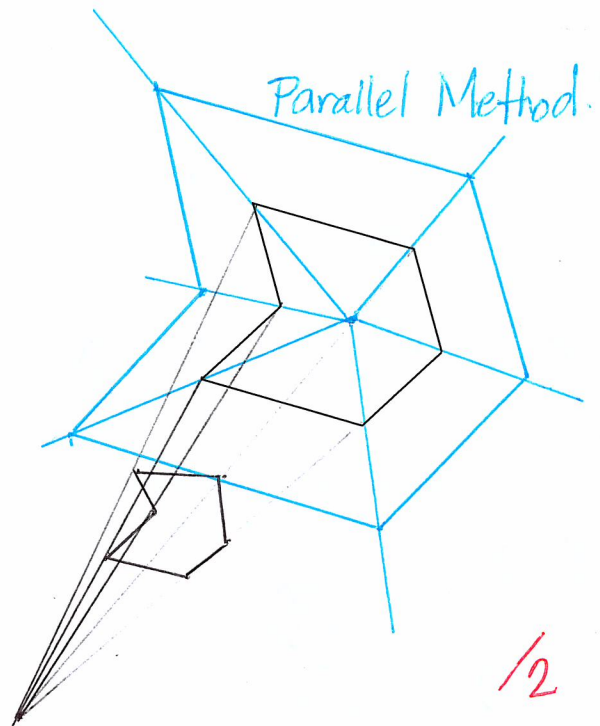


9. Do ONE of the following only: (3 marks)

a. Use the Ratio Method (See page 250 of text) to reduce the following diagram by scale factor of $\frac{1}{2}$.

OR

b. Use the Parallel Method (See page 251 of text) to enlarge the following diagram by a scale factor of 2.



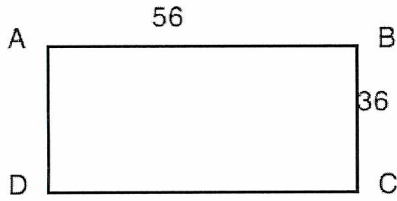
10. 1 cm on a map represents 25 Km in real life. How long would a line on a map be from Regina to Saskatoon if they are 250 Km apart? (1)

$$\frac{1 \text{ cm}}{25 \text{ km}} = \frac{x}{250}$$

$$\frac{25x}{25} = \frac{250}{25}$$

$$x = 10 \text{ cm}$$

11. Which of the following rectangles are similar to rectangle ABCD?



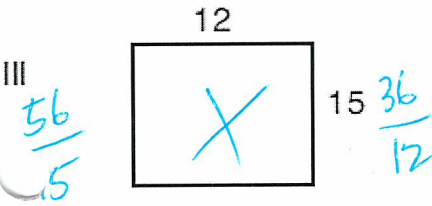
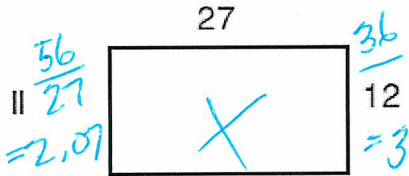
↑

$\frac{56}{8} = 7$ $\frac{36}{6} = 6$

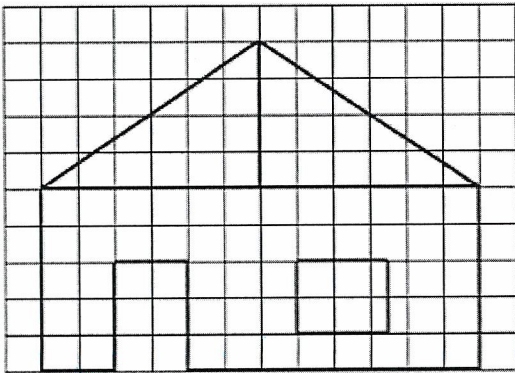


- a) I only
- b) II only
- c) III only
- d) I & III only
- e) I, II, and III

f) NONE!



12. The figure below is a scale drawing of a playhouse. In the drawing, the side of each square represents 1.75 feet



Find the actual length of the following
a) The width of the house.

↑

$\frac{1 \text{ box}}{1.75'} = \frac{12 \text{ boxes}}{w}$ width = 21'

b) The height of the house at its peak of the roof.

$9 \times 1.75 = 15.75'$ ↑

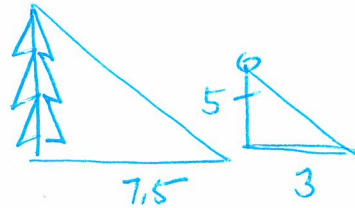
c) The dimensions of the door.

2x3 boxes $3.5' \times 5.25'$ ↑

d) If the architect who drew this blueprint drew another drawing of one of the sides of the house, how many boxes would he use to represent the house being 31.5 feet deep.

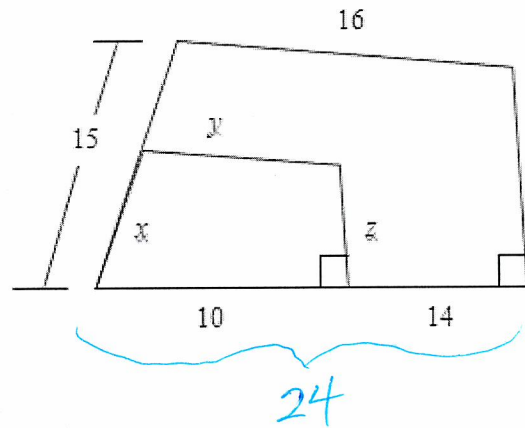
↑ $31.5 \div 1.75 = 18$ boxes

13. A tree casts a shadow 7.5 ft long at the same time that a woman 5 ft tall casts a shadow 3 ft long. How tall is the tree?



$\frac{x}{5} = \frac{7.5}{3}$
 $3x = 37.5$
 $\frac{3x}{3} = \frac{37.5}{3}$
 $x = 12.5'$ ↑

14. Determine the values of x, y & z using the following diagram.



Scale factor
small
big
 $\frac{10}{24}$

$\frac{10}{24} = \frac{x}{15} \rightarrow \frac{24x}{24} = \frac{150}{24}$

$x = 6.25$

$\frac{10}{24} = \frac{y}{16} \rightarrow 24y = 160$

$y = 6.\bar{6}$

$\frac{10}{24} = \frac{z}{12} \rightarrow 24z = 120$
 $z = 5$

$z = 5$

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