PRACTICE

Find the area of the following. Label you answer!

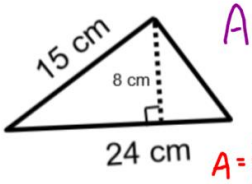
1.

$A = bh$

$A = 5(12)$

$A = 60\ ft^2$

2.

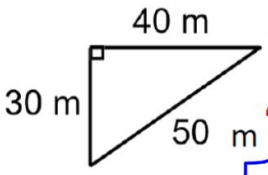


$A = \frac{1}{2}bh$

$A = \frac{1}{2}(24)(8)$

$A = 96\ cm^2$

3.



$A = \frac{1}{2}bh$

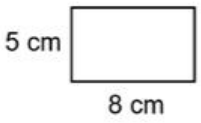
$A = \frac{1}{2}(40)(30)$

$A = 600\ m^2$

Draw and label the sides of the similar figures with the given scale factor. Find the perimeter and area.

4.

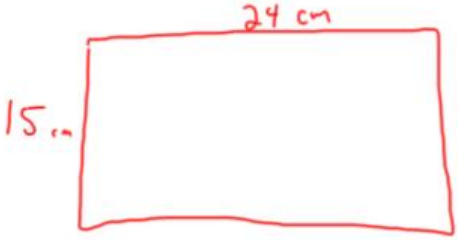
Original Figure



Original Perimeter = $5+8+5+8 = 26\ cm$

Original Area = $5(8) = 40\ cm^2$

Scale Factor = 3



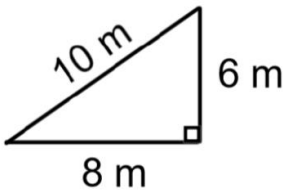
New Perimeter = $15+24+15+24 = 78\ cm$

New Area = $15(24) = 360\ cm^2$

How many times bigger is the new area to the original area? $\frac{360}{40} = 9$ times ← scale factor squared

5.

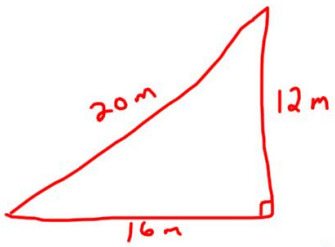
Original Figure



Original Perimeter = $10+6+8 = 24\ m$

Original Area = $\frac{1}{2}(8)(6) = 24\ m^2$

Scale Factor = 2



New Perimeter = $16+12+20 = 48\ m$

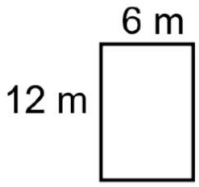
New Area = $\frac{1}{2}(16)(12) = 96\ m^2$

How many times bigger is the new perimeter to the original perimeter? $\frac{48}{24} = 2$ times ← scale factor

Label the sides of the similar figures with the given scale factor. Find the perimeter and area.

6.

Original Figure



Scale Factor = $\frac{1}{2}$

Original Perimeter = $12+6+12+6 = 36\text{ m}$

Original Area = $12(6) = 72\text{ m}^2$

New Perimeter = $6+3+6+3 = 18\text{ m}$

New Area = $3(6) = 18\text{ m}^2$

How many times bigger is the new perimeter to the original perimeter? $\frac{18}{36} = \frac{1}{2}$ times ← scale factor

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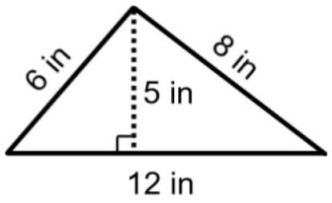
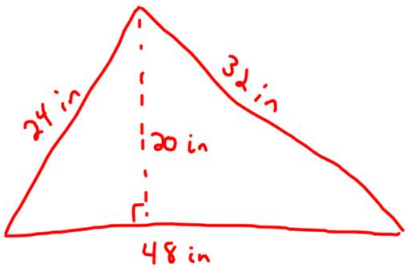
7.

Original Figure



Scale Factor = 4



Original Perimeter = $6+8+12 = 26\text{ in}$

Original Area = $\frac{1}{2}(12)(5) = 30\text{ in}^2$

New Perimeter = $24+32+48 = 104\text{ in}$

New Area = $\frac{1}{2}(48)(20) = 480\text{ in}^2$

How many times bigger is the new area to the original area? $\frac{480}{30} = 16$ times ← scale factor squared 4^2

Answer the following.

8. A rectangle with perimeter of 120 cm is scaled up by a factor of 5. What is the new rectangle's perimeter?

$120(5) = 600\text{ cm}$

9. A rectangle with area of 40 cm^2 is scaled up by a factor of 5. What is the new rectangle's area?

$40(5^2) = 1000\text{ cm}^2$

10. A triangle with perimeter of 28 ft is scaled down by a factor of $\frac{3}{4}$. What is the new rectangle's perimeter?

$28\left(\frac{3}{4}\right) = 21\text{ ft}$

11. A triangle with area of 54 cm^2 is scaled down by a factor of $\frac{1}{3}$. What is the new rectangle's area?

$54\left(\frac{1}{3}\right)^2 = 6\text{ cm}^2$