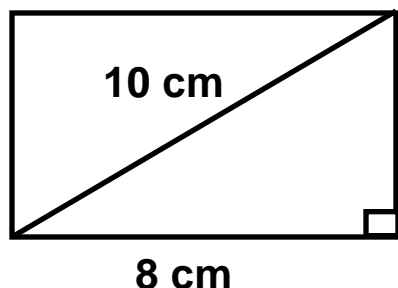


TOPIC 11-5: EFFECTS OF CHANGING DIMENSIONS ON AREA



Bellwork: Find the area of the rectangle below.



A = _____

What would happen if we changed one or both dimensions in the above rectangle?

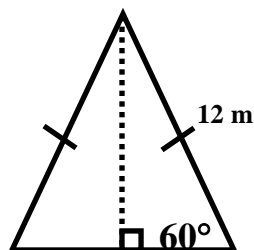
| <i>Original Area</i> | <i>Change in Width</i> | <i>Change in Length</i> | <i>New Area</i> | <i><u>New Area</u> <u>Orig. Area</u></i> |
|-----------------------------|-------------------------------|--------------------------------|------------------------|---|
| | Twice as long | Twice as long | | |
| | Stays the same | Three times as long | | |
| | Four times as long | Half as long | | |
| | One-fourth as long | Twice as long | | |

What pattern did we see?

To find the area when changing dimensions:

$$\underline{\text{Original AREA}} \times \underline{\text{change}} \times \underline{\text{change}}$$

EXAMPLE 1 Find the area of the isosceles triangle below, if its base were doubled and height were tripled.

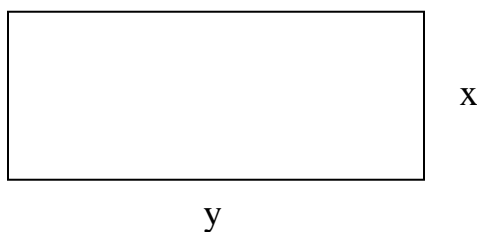


A("changed" triangle) = _____

EXAMPLE 2 The area of a triangle is 36 square millimeters. Suppose the height was half as long, and the base was four times as long. What is the percent increase of the area?

A("changed" triangle) = _____ Percent increase = _____

EXAMPLE 3 Find the area of the rectangle below if the width was increased by a factor of 3 and the length was increased by a factor of 4.



A("changed" rectangle) = _____