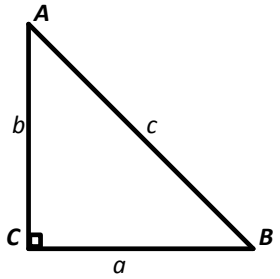
The Pythagorean Theorem

<u>The Pythagorean Theorem</u> - Used to find the third side of a right triangle when two sides are given.



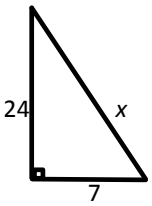
$$a^2 + b^2 = c^2$$

<u>Pythagorean Triples</u>

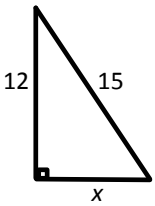
3 - 4 - 5
6 - 8 - 10
5 - 12 - 13
7 - 24 - 25
8 - 15 - 17
9 - 40 - 41

1. Find the value of each variable.

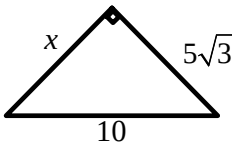
a)



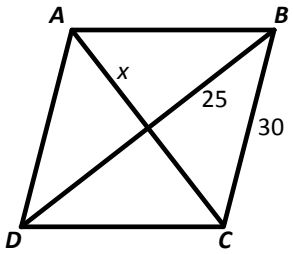
b)



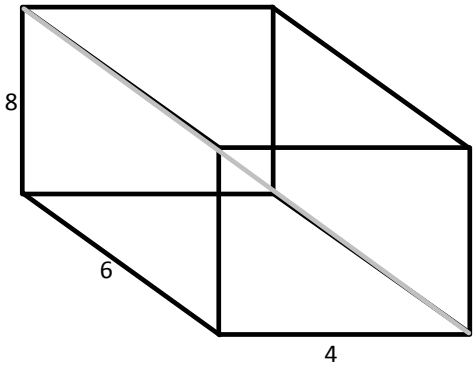
c)



d) *ABCD* is a rhombus.



e) Find the length of the main diagonal of the rectangular prism.



Classifying Triangles Using the Pythagorean Theorem

Right Triangle - $a^2 + b^2 = c^2$

Acute Triangle - $a^2 + b^2 > c^2$

Obtuse Triangle - $a^2 + b^2 < c^2$

2. Classify the triangle as right, acute or obtuse.

a) 20, 21, 29

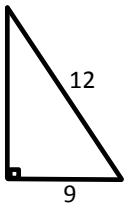
b) 5, 8, 9

c) 2, 10, 11

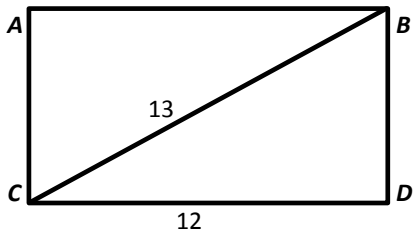
d) 5, 11, 6

3. Find the area.

a)



b) *ABCD* is a rectangle. Find the area of *ΔBCD*.



c)