

## Application Worksheet #6

Solve the problem.

- 1) One leg of a right triangle is 4 cm shorter than the other leg. The length of the hypotenuse is 20 cm. Find the length of the shorter leg. 1) \_\_\_\_\_

- 2) Within a group of  $n$  people, the number of possible handshakes,  $N$ , is given by  $N = \frac{1}{2}(n^2 - n)$ . At a party, everybody shakes hands with every other person. If the total number of handshakes is 55, how many people are at the party? 2) \_\_\_\_\_

3) If an object is propelled upward from a height of 112 feet at an initial velocity of 96 feet per second, then its height  $h$  after  $t$  seconds is given by the equation  $h = -16t^2 + 96t + 112$ . After how many seconds does the object hit the ground? 3) \_\_\_\_\_

4) Many people suffering from constricted bronchial muscles inhale the drug Albuterol for relief. The number of micrograms  $A$  of Albuterol in a person's bloodstream  $t$  minutes after 200 micrograms have been inhaled can be approximated by  
 $A = -50t^2 + 200t$ .  
How long after an inhalation will there be about 168 micrograms of Albuterol in the bloodstream? Round to the nearest tenth of a minute. 4) \_\_\_\_\_