MA 220, Lesson 8 notes
Sections 5.6 and 8.5 (Applied Problems)

To solve an application (applied) problem.

1. Let a variable represent an unknown. You may have to use that variable in expression(s) to represent other unknowns in the problem.

2. Think of a plan: How is(are) the variable(s) and other numbers in the problem related. The plan will be a 'sentence' or formula that will lead to an equation.

3. Write an equation from the plan and solve.

4. Answer the question in the problem (with labels as necessary). Check reasonableness of answer.

Ex 1: The sum of a positive number and its square is 240. Find the number.

Ex 2: A rectangular multi-purpose room in a building has a length 7 meters greater than its width. The area of the room is 540 square meters. Find the dimensions of the room.

Ex 3: The outside dimensions of a picture frame or uniform width are 16 inches and 11 inches. If the area of the picture area that is exposed through the frame is 126 square inches, find the width of the frame.

Ex 4: The height h in feet of a baseball hit 3 feet above the ground is given by $h = -16t^2 + 75t + 3$ where t is time in seconds. At what times will the baseball be 89 feet above the ground? When will the baseball hit the ground?

Ex 5: The product of two positive and **consecutive odd integers** is 323. Find the two integers.

Ex 6: The height of a triangle is 5 greater than its base. The area of the triangle is 25 square centimeters. Find the height of the triangle and the length of the base of the triangle.