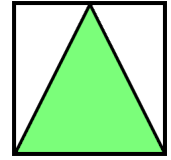# Applications of Quadratic Equations

1. An isosceles triangle is drawn inside a square so that their bases coincide and the vertex of the triangle lies on the square's side. If the area of the triangle needs to be 12 square inches, find the side of the square.

2. A box is made from a square sheet of cardboard by cutting four 4 cm x 4 cm square-shaped corners off and then folding the sides. The volume of the box is to be 550 cm^3. What should be the dimensions of the original sheet of cardboard?
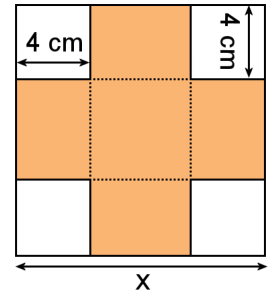
3. Jill wants to make a picture frame to go around her 10 cm x 15 cm picture so that the area of the picture is 75% of the total area of the (frame + picture) together. What should be the width of the frame?
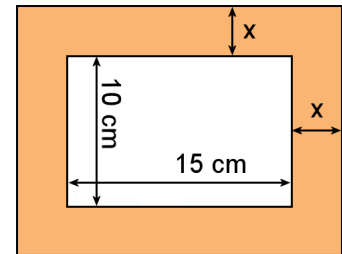
4. A square-shaped picture is inside a 3-cm wide frame. If the area of the picture needs to be half the area of the frame + picture, find the dimensions of the square picture.

5. Greg wants to cut off a square-shaped plot from his 200 yd x 110 yd plot so that the cut off part would be 20% of the total area of his plot. What should be the length of the side of the square?