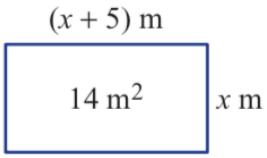
COSMOS COACHING CENTRE

Worksheet 21
QUADRATIC EQUATIONS AND GRAPHS OF PARABOLAS
- Using quadratics to solve worded problems

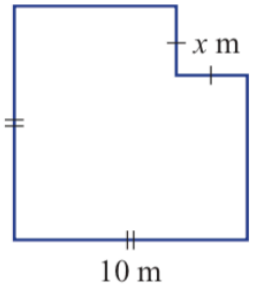
1. This rectangle has an area of 14 m^2 and a length that is 5 m more than its width.



   a Using length × width = area, write an equation.
   b Solve your equation by expanding and subtracting 14 from both sides. Then use the Null Factor Law.
   c Which of your two solutions is feasible for the width of the rectangle?
   d Write down the dimensions (width and length) of the rectangle.

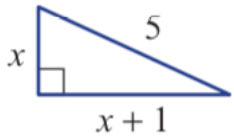
2. The product of a number and 13 less than the same number is 30. Write an equation and solve to find the two possible solutions.

3. A square of side length 10 metres has a square of side length x metres removed from one corner.



   a Write an expression for the area remaining after the square of side length x metres is removed. Hint: use subtraction.
   b Find the value of x if the area remaining is to be 64 m^2.

4. Use Pythagoras' theorem to find the value of x in these right-angled triangles.



5. A square picture is surrounded by a rectangular frame as shown. The total area is to be 320 cm^2. Find the side length of the picture.