

## Quadratic Solving In Context

Solve the following equations.

1.  $x^2 + 2x = 15$ .

$$x = 3 \text{ or } x = -5$$

2.  $2x^2 + 20x + 48 = 0$ .

$$x = -4 \text{ or } x = -6$$

3.  $2x^2 + 5 = 11x$ .

$$x = 5 \text{ or } x = \frac{1}{2}$$

4.  $3w^2 + 3w = 90$ .

$$w = -6 \text{ or } w = 5$$

5.  $4x^2 = 8x + 5$ .

$$x = -\frac{1}{2} \text{ or } x = \frac{5}{2}$$

6.  $2x^2 + 4x - 3 = x^2 + 2$ .

$$x = 1 \text{ or } x = -5$$

7.  $x^2 + 7x - 2 = 5 + x + x^2$ .

$$x = \frac{7}{6}$$

8.  $3x^2 + 19 = 2x^2 + 6x + 10$ .

$$x = 3 \text{ (repeated)}$$

9.  $9y^2 + 6y = 4 + 6y$ .

$$y = -\frac{2}{3} \text{ or } y = \frac{2}{3}$$

10.  $6z^2 + 5z = 24z + 20$ .

$$z = 4 \text{ or } z = -\frac{5}{6}$$

Now solve (for  $x$ ) the following right angled triangles using Pythagoras and hence find the three sides of each triangle.