SPTA
N5 Homework
Quadratics 1 (B)

Show all working – Calculator allowed unless stated.

Marks

1. Solve these quadratic equations by first factorising:

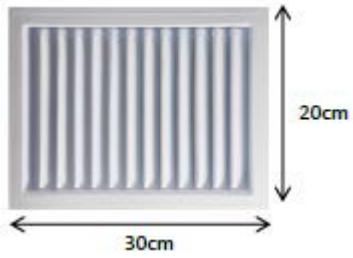
a) $x^2 - 7x + 12 = 0$ **(b)** $3x^2 + 11x - 4 = 0$ **(4)**

2. Solve the equation $3x^2 - 2x - 10 = 0$ correct to 2 significant figures **(4)**

3. Determine the nature of the roots of the following quadratic equations:

a) $5x^2 - 2x + 1 = 0$ **(b)** $4x^2 - 12x + 9 = 0$ **(c)** $x^2 + 7x - 2 = 0$ **(6)**

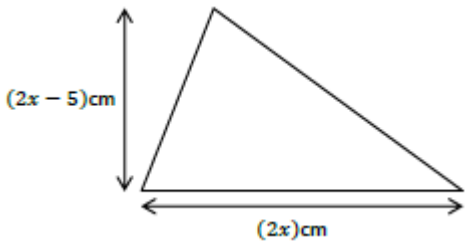
4. A rectangular wall vent is 30cm long and 20cm wide. It is to be enlarged by increasing both the length and the width by $\boldsymbol{x}$ centimetres.



a) Write down the length of the new vent **(1)**

b) Show that the area, Acm^2, of the new vent is given by $A = x^2 + 50x + 600$ **(2)**

5.



The height of a triangle is $(2x - 5)$ centimetres and the base is $2x$ centimetres

The area of the triangle is $7cm^2$

Area of Triangle

$$A = \frac{1}{2}bh$$

Calculate the value of x. **(5)**

Total Marks: 22