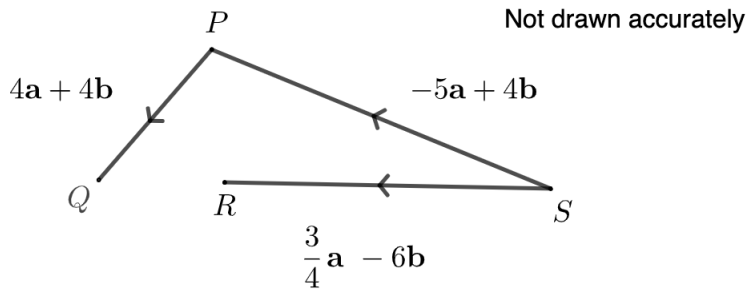
Target 8 Sheet 01C

Question 1

Solve:
$4\,x^2 + 20\,x - 69 = 7\,x - 3$

Question 2

Show that QRS is a straight line.



Question 1

Solve:
$4\,x^2 + 20\,x - 69 = 7\,x - 3$

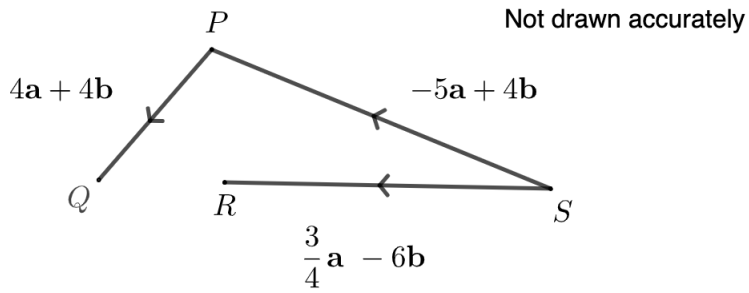
Rearranging, we get: $4\,x^2 + 13\,x - 66 = 0$

Factorising, we see $(x + 6)(4\,x - 11) = 0$

So $x = -6$, $x = \frac{11}{4}$

Question 2

Show that QRS is a straight line.



$\overrightarrow{QS} = \overrightarrow{QP} + \overrightarrow{PS}$
$= (-4\mathbf{a} - 4\mathbf{b}) + (5\mathbf{a} - 4\mathbf{b}) = \mathbf{a} - 8\mathbf{b}$

$\overrightarrow{RS} = \frac{3}{4}\mathbf{a} - 6\mathbf{b} = \frac{3}{4}\overrightarrow{QS}$, so QRS is a straight line.