27th February

Simplify fully

\[ \frac{3x}{x^2 + 3x + 2} + \frac{3}{x + 1} \]

a is directly proportional to \( \sqrt{c} \).
w is inversely proportional to \( a^3 \).

When \( c = 49 \), \( a = 35 \)
When \( a = 2 \), \( w = 16 \).

Find the value of \( w \) when \( c = 4 \).

Write down the equation of the curve shown.

A circle has equation \( x^2 + y^2 = 25 \)
A straight line meets the circle at the points A and B.

Find the coordinates of the points A and B. Give your answers in surd form.