2. The points (x, y) on the curve C satisfy

$$(x + 1)(x + 2)\frac{dy}{dx} = xy.$$

The line with equation $y = 2x + 5$ is the tangent to C at a point P.

(a) Find the coordinates of P.

(4)

(b) Find the equation of C, giving your answer in the form $y = f(x)$.

(8)