

1. The curve  $C$  has equation

$$y = \frac{3}{2}x^3 - 5x - \frac{10}{x}$$

(a) Find  $\frac{dy}{dx}$  giving your answer in simplest form.

**(3)**

Given that the point  $P(-2, 3)$  lies on  $C$ ,

(b) find the equation of the normal to  $C$  at  $P$ , giving your answer in the form  $ax + by + c = 0$  where  $a$ ,  $b$  and  $c$  are integers.

**(4)**