

**3 (a)** Sketch the curve  $y = -\frac{1}{x^2}$ . **[1]**

**(b)** The curve  $y = -\frac{1}{x^2}$  is translated by 2 units in the positive  $x$ -direction.

State the equation of the curve after it has been translated. **[2]**

**(c)** The curve  $y = -\frac{1}{x^2}$  is stretched parallel to the  $y$ -axis with scale factor  $\frac{1}{2}$  and, as a result, the point  $(\frac{1}{2}, -4)$  on the curve is transformed to the point  $P$ .

State the coordinates of  $P$ . **[2]**