1 Solve the inequality $(x+2)(4x-5) \leqslant 0$. [2]

2 Given that $y = \dfrac{4x^3 - 5}{x^2}$, show that $\dfrac{\mathrm{d}y}{\mathrm{d}x}$ can be written as $\dfrac{2(2x^3+5)}{x^3}$. [3]

3 Variables x and y are such that when $\sqrt{y}$ is plotted against x^3 a straight line graph passing through the points (2, 5) and (10, 21) is obtained.

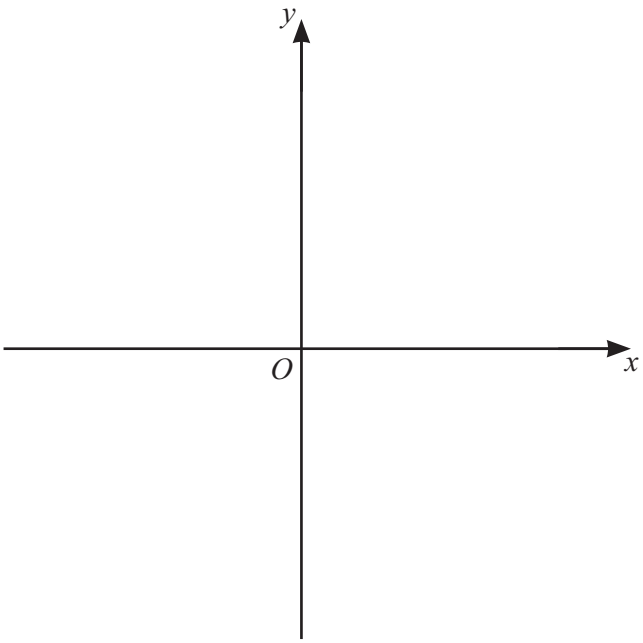
Find y in terms of x. [4]

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4 The function f is defined by $\mathrm{f}(x) = 2x - 1$ for $x \in \mathbb{R}$.

(a) Explain why the function f^2 can be formed. [1]

(b) On the axes, sketch the graph of $y = \left|\mathrm{f}^2(x)\right|$.
State any intercepts with the coordinate axes. [4]



(c) It is given that $\left|\mathrm{f}^2(x)\right| \leqslant ax + b$ for $-1 \leqslant x \leqslant 3$ and for **no other** values of x.

Find the values of a and b. [3]

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