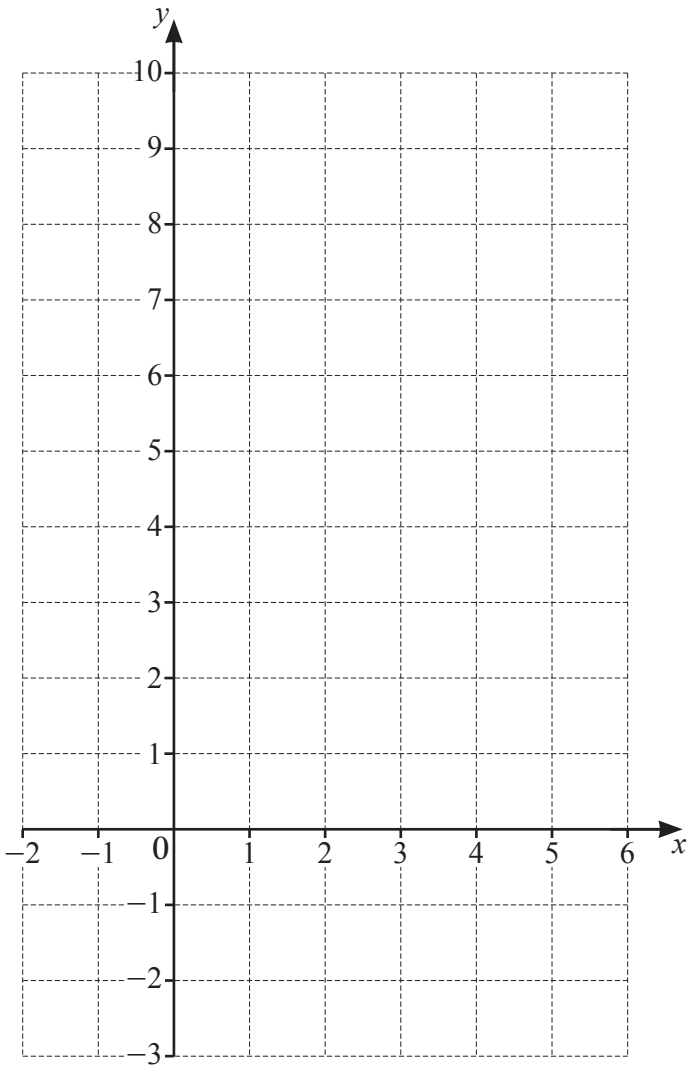
3 (a)



Draw the graphs of $y = |2x - 5|$ and $y = |4 - x|$ for $-2 \leqslant x \leqslant 6$. [4]

(b) Use your graphs to solve the inequality $|4 - x| \leqslant |2x - 5|$. [2]

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4 **(a)** Find and simplify the term independent of x in the expansion of $\left(x^2 - \frac{1}{2x^3}\right)^{10}$. [2]

(b) **DO NOT USE A CALCULATOR IN THIS PART OF THE QUESTION.**

(i) Use the binomial theorem to show that $\left(1+2\sqrt{2}\right)^4 - \left(1-2\sqrt{2}\right)^4 = k\sqrt{2}$, where k is an integer to be found. [4]

(ii) Hence write $\dfrac{\left(1+2\sqrt{2}\right)^4 - \left(1-2\sqrt{2}\right)^4}{1+\sqrt{2}}$ in the form $a+b\sqrt{2}$, where a and b are integers. [2]