6 The equation of a curve is $y = 3\cos 2x$ and the equation of a line is $2y + \dfrac{3x}{\pi} = 5$.

   (i) State the smallest and largest values of y for both the curve and the line for $0 \leqslant x \leqslant 2\pi$.   [3]

....

....

....

....

....

....

....

....

   (ii) Sketch, on the same diagram, the graphs of $y = 3\cos 2x$ and $2y + \dfrac{3x}{\pi} = 5$ for $0 \leqslant x \leqslant 2\pi$.   [3]

   (iii) State the number of solutions of the equation $6\cos 2x = 5 - \dfrac{3x}{\pi}$ for $0 \leqslant x \leqslant 2\pi$.   [1]

....

....

....

....