5 DO NOT USE A CALCULATOR IN THIS QUESTION.

Find the x-coordinates of the points of intersection of the curves $y = 7x^3 - 7x^2 - 17x - 4$ and $y = x^3 - 2x^2 - 4x - 16$. [5]

6 A 4-digit code is to be formed using 4 different numbers selected from 2, 3, 4, 5, 6, 7, 8 and 9. Find how many possible codes there are if the code forms

(a) a number that is odd and greater than 5000, [3]

(b) a number greater than 5000 with a last digit that is prime. [3]

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7 **(a)** Show that $\frac{\sin x}{1-\cos x}+\frac{1-\cos x}{\sin x}=2\operatorname{cosec} x$. [4]

(b) Hence solve the equation $\frac{\sin x}{1-\cos x}+\frac{1-\cos x}{\sin x}=3\sin x-1$ for $0° < x < 360°$. [4]