9 **(a)** **(i)** Find how many different 4-digit numbers can be formed using the digits 2, 3, 5, 7, 8 and 9, if each digit may be used only once in any number. [1]

(ii) How many of the numbers found in **part (i)** are divisible by 5? [1]

(iii) How many of the numbers found in **part (i)** are odd and greater than 7000? [4]

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(b) The number of combinations of n items taken 3 at a time is $92n$. Find the value of the constant n. [4]

10 **(a)** Solve $\tan(\alpha + 45°) = -\frac{1}{\sqrt{2}}$ for $0° \leqslant \alpha \leqslant 360°$. [3]

(b) **(i)** Show that $\frac{1}{\sin\theta - 1} - \frac{1}{\sin\theta + 1} = a\sec^2\theta$, where a is a constant to be found. [3]

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