# Converting Between Fractions and Recurring Decimals

21 marks

**1.** Convert the recurring decimal $0.\dot{2}\dot{9}$ to a fraction.

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**(Total 2 marks)**

**2.** (a) Change $\dfrac{3}{11}$ to a decimal.

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**(1)**

(b) Prove that the recurring decimal $0.\dot{3}\dot{9} = \dfrac{13}{33}$

**(3)**

**(Total 4 marks)**

**3.** (a) Express $0.\dot{2}\dot{7}$ as a fraction in its simplest form.

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**(3)**

$x$ is an integer such that $1 \leq x \leq 9$

(b)    Prove that $0.0\dot{x} = \dfrac{x}{99}$

**(2)**
**(Total 5 marks)**

**4.**    (i)    Convert the recurring decimal $0.3\dot{6}$ to a fraction.

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(ii)    Convert the recurring decimal $2.1\dot{3}\dot{6}$ to a mixed number.
Give your answer in its simplest form.

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**(Total 5 marks)**

**5.** The recurring decimal $0.\dot{7}\dot{2}$ can be written as the fraction $\dfrac{8}{11}$

Write the recurring decimal $0.5\dot{7}\dot{2}$ as a fraction.

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**(Total 2 marks)**

**6.** Express $0.3\dot{2}\dot{8}$ as a fraction in its simplest form.

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**(Total 3 marks)**