**Calculations with Recurring Decimals**

(a) Using algebra, show that

$$0.\dot{2}+0.\dot{2}\dot{3}=\frac{5}{11}$$

(b) Using algebra, show that

$$1.3\dot{8}\dot{1}-0.\dot{8}\dot{1}=\frac{31}{55}$$

(a) Using algebra, show that

$$0.\dot{5}×0.\dot{5}\dot{4}=\frac{10}{33}$$

(b) Using algebra, show that

$$4×0.8\dot{5}×0.\dot{1}\dot{5}=\frac{14}{27}$$

(a) Using algebra, show that

$$0.\dot{7}÷0.2\dot{1}=3\frac{13}{19}$$

(b) Using algebra, show that

$$0.3\dot{5}÷1.2\dot{7}=\frac{32}{115}$$

(a) Show that the mean of the three numbers

$0.\dot{8}, 0.8\dot{1}$ and $0.\dot{8}\dot{1}$

can be written in its simplest form as a fraction $\frac{a}{b}$, where $a$ and $b$ are integers to be found.

(b) Using algebra, prove that the area of the trapezium shown is

$$ \frac{97}{330} cm^{2}$$

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