1   Write these numbers in order of size.
Start with the smallest number.

$$0.2\dot{4}\dot{6} \qquad 0.246\dot{6} \qquad 0.\dot{2}4\dot{6} \qquad 0.246$$

(Total for Question 1 is 2 marks)

2 $x = 0.4\dot{3}\dot{6}$

Prove algebraically that x can be written as $\dfrac{24}{55}$

(Total for Question 2 is 3 marks)

2 $x = 0.4\dot{3}\dot{6}$

Prove algebraically that x can be written as $\dfrac{24}{55}$

3   Prove algebraically that $0.7\dot{3}$ can be written as $\dfrac{11}{15}$

(Total for Question 3 is 2 marks)

3   Prove algebraically that $0.7\dot{3}$ can be written as $\dfrac{11}{15}$

4   Ted is trying to change $0.\overset{..}{4\overset{}{3}}$ to a fraction.

Here is the start of his method.

$$x = 0.\dot{4}\dot{3}$$

$$10x = 4.\dot{3}\dot{4}$$

$$10x - x = 4.\dot{3}\dot{4} - 0.\dot{4}\dot{3}$$

Evaluate Ted's method so far.

....

....

....

(Total for Question 4 is 1 mark)

5 Prove algebraically that $0.2\dot{5}\dot{6}$ can be written as $\dfrac{127}{495}$

(Total for Question 5 is 3 marks)

6 Express $0.4\dot{1}\dot{8}$ as a fraction.
You must show all your working.

....

(Total for Question 6 is 3 marks)

7 Using algebra, prove that $1.06\dot{2}$ can be written as $1\dfrac{14}{225}$

(Total for Question 7 is 3 marks)

8 Express $0.1\dot{1}\dot{7}$ as a fraction.
You must show all your working.

....

(Total for Question 8 is 3 marks)

9 Using algebra, prove that $0.1\dot{3}\dot{6} \times 0.\dot{2}$ is equal in value to $\dfrac{1}{33}$

(Total for Question 9 is 3 marks)

9 Using algebra, prove that $0.1\dot{3}\dot{6} \times 0.\dot{2}$ is equal in value to $\dfrac{1}{33}$