



Recurring Decimal to Fraction Exam Practice

Q1. Convert $\frac{2}{15}$ to a decimal.

Answer: _____
(2 marks)

Q2. Convert $\frac{5}{11}$ to a decimal.

Answer: _____
(2 marks)

Q3. Convert $\frac{4}{9}$ to a decimal.

Answer: _____
(2 marks)



Q4. Prove algebraically that the recurring decimal $0.363636\dots$ is equivalent to the fraction $\frac{4}{11}$

Answer: _____
(2 marks)

Q5. Prove algebraically that the recurring decimal $0.\dot{7}$ is equivalent to the fraction $\frac{7}{9}$

Answer: _____
(2 marks)



Q6. Prove algebraically that the recurring decimal $0.\dot{4}\dot{7}$ is equivalent to the fraction $\frac{47}{99}$

Answer: _____
(2 marks)

Q7. Prove algebraically that the recurring decimal $0.0\dot{1}\dot{6}$ is equivalent to the fraction $\frac{8}{495}$

Answer: _____
(2 marks)



Q8. Prove algebraically that the recurring decimal $0.1\dot{5}\dot{8}$ is equivalent to the fraction $\frac{a}{b}$ where a, b are whole numbers to be found.

Answer: _____
(2 marks)

Q9. Prove algebraically that the recurring decimal $0.4\dot{2}$ is equivalent to the fraction $\frac{19}{45}$

Answer: _____
(2 marks)



Q10. Prove algebraically that the recurring decimal $0.53\dot{2}$ is equivalent to the fraction $\frac{479}{900}$

Answer: _____
(2 marks)

Problem Questions:

Q11. Work out the following using algebra: $0.8\dot{2} + 0.\dot{3}$

Answer: _____
(3 marks)



Q12. Work out the following using algebra: $0.\dot{7}\dot{2} \times 0.\dot{7}$

Answer: _____
(3 marks)

Q13. (i) Convert the following to a mixed number using algebra: $5.\dot{3}\dot{4}\dot{5}$

Answer: _____
(2 marks)

(ii) Hence work out $5.\dot{3}\dot{4}\dot{5} - 3.\dot{2}\dot{2}\dot{5}$

Answer: _____
(2 marks)



Q14. a) A simplified fraction will be equivalent to a terminating decimal only if its denominator is just a product of 2's and/or 5's only.

(i) Use the above fact to show that $\frac{11}{28}$ will be a recurring decimal.

Answer: _____
(1 mark)

(ii) Use the above rule to decide if $\frac{583}{3500}$ is a terminating decimal.

Answer: _____
(1 mark)

(b) Using algebra, work out: $\frac{0.13\dot{7}4 \div 0.\dot{8}}{2}$

Answer: _____
(3 marks)



Q15. Prove that $0.\dot{0}0\dot{x}$ is equivalent to the fraction $\frac{x}{999}$ where x is a single non-zero digit.

Answer: _____
(3 marks)

Q16. Work out the equivalent fraction to $0.\dot{y}\dot{x} - 0.\dot{x}\dot{y}$ with $y = x - 1$ where $2 \leq x \leq 9$ and $1 \leq y \leq 8$. You must justify every step.

Answer: _____
(4 marks)