



THIRD SPACE
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GCSE Exam Questions

Recurring Decimals to Fractions
| Number

GCSE Exam Questions: Recurring Decimals to Fractions

- 1) Write $0.\dot{2}$ as a fraction in its simplest form.

(3 marks)

- 2) Write the numbers below in ascending order:

$0.\dot{2}$

$\frac{9}{22}$

$0.\dot{3}\dot{1}$

$\frac{8}{21}$

(3 marks)

- 3) Write $1.\dot{1}\dot{5}$ as a mixed number. Give your answer in its simplest form.

(4 marks)

GCSE Exam Questions: Recurring Decimals to Fractions

- 4) Work out the following giving your answer as a fraction in simplest form.

$$0.\dot{2} \times 0.\dot{6}\dot{3} \div 0.\dot{4}0\dot{7}$$

(4 marks)

- 5) Prove algebraically that $0.4\dot{5}\dot{1} = \frac{149}{330}$

(5 marks)

GCSE Exam Questions: Recurring Decimals to Fractions Answers

	Question	Answer	Marks
1)	Write $0.\dot{2}$ as a fraction in its simplest form.	$x = 0.\dot{2}$ $0.\dot{2} \times 10$ or $2.\dot{2}$ or $10x = 2.\dot{2}$ seen $9x = 2$ or $10x - x = 2.\dot{2} - 0.\dot{2}$ $\frac{2}{9}$	(1) (1) (1)
2)	Write the numbers on the right in ascending order: $0.\dot{2}$, $\frac{9}{22}$, $0.\dot{3}\dot{1}$, $\frac{8}{21}$	$\frac{9}{22} = 0.40\dots$ or $\frac{8}{21} = 0.38$ or $0.\dot{2} = \frac{2}{9}$ or $0.\dot{3}\dot{1} = \frac{31}{99}$ Two correct conversions $0.\dot{2}$, $0.\dot{3}\dot{1}$, $\frac{8}{21}$, $\frac{9}{22}$	(1) (1) (1)
3)	Write $1.\dot{1}\dot{5}$ as a mixed number. Give your answer in its simplest form.	$x = 1.\dot{1}\dot{5}$ $1.\dot{1}\dot{5} \times 100$ or $115.\dot{1}\dot{5}$ or $100x = 115.\dot{1}\dot{5}$ $100x - x = 115.\dot{1}\dot{5}$ oe $x = \frac{114}{99}$ $1\frac{5}{33}$	(1) (1) (1) (1)
4)	Work out the following giving you $0.\dot{2} \times 0.\dot{6}\dot{3} \div 0.\dot{4}0\dot{7}$	$0.\dot{2} = \frac{2}{9}$ or $0.\dot{6}\dot{3} = \frac{7}{11}$ or $0.\dot{4}0\dot{7} = \frac{11}{27}$ All 3 correct fractions $\frac{2}{9} \times \frac{7}{11} \div \frac{11}{27} = \frac{14}{99} \div \frac{11}{27}$ oe $\frac{42}{121}$	(1) (1) (1) (1)

GCSE Exam Questions: Recurring Decimals to Fractions Answers

	Question	Answer	Marks
1)	Prove algebraically that $0.4\dot{5}\dot{1} = \frac{149}{330}$	$x = 0.4\dot{5}\dot{1}$ or $10x = 4.\dot{5}\dot{1}$	(1)
		$1000x = 451.\dot{5}\dot{1}$ or $100x = 4.\dot{5}\dot{1}$	(1)
		$1000x - 100x = 451.\dot{5}\dot{1} - 4.\dot{5}\dot{1}$ or	
		$100x - x = 45.\dot{1}\dot{5}\dot{1} - 0.4\dot{5}\dot{1}$ or	(1)
		$990x = 447$ or $x = \frac{447}{990}$	(1)
		$\frac{149}{330}$	(1)

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