Recurring Decimals

Video 96 on www.corbettmaths.com

Examples

Workout

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Question 1: Use division to convert these fractions to recurring decimals.

(a) $\frac{1}{3}$ (b) $\frac{2}{3}$ (c) $\frac{4}{9}$ (d) $\frac{7}{9}$ (e) $\frac{1}{6}$ (f) $\frac{5}{6}$

(g) $\frac{3}{11}$ (h) $\frac{8}{15}$ (i) $\frac{5}{22}$ (j) $\frac{1}{7}$ (k) $\frac{1}{30}$ (l) $\frac{6}{7}$

Question 2: Convert the following recurring decimals to fractions.
Give each answer in its simplest form.

(a) 0.5555... (b) 0.1111... (c) 0.121212...

(d) 0.363636... (e) 0.919191... (f) 0.727272...

(g) 0.125125... (h) 0.621621... (i) 0.204204...

Question 3: Convert the following recurring decimals to fractions.
Give each answer in its simplest form.

(a) $0.\dot{2}$ (b) $0.\dot{8}$ (c) $0.\dot{1}\dot{8}$

(d) $0.\dot{5}\dot{3}$ (e) $0.\dot{7}\dot{5}$ (f) $0.\dot{6}\dot{3}$

(g) $0.\dot{1}1\dot{2}$ (h) $0.\dot{3}39\dot{}$ (i) $0.\dot{1}71\dot{}$

Question 4: Convert the following recurring decimals to fractions.
Give each answer in its simplest form.

(a) 0.53333... (b) 0.26666... (c) 0.08888...

(d) 0.1353535... (e) 0.4505050... (f) 0.9121212...

(g) 0.0152152... (h) 0.123333... (i) 0.354141414...

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Question 5: Convert the following recurring decimals to fractions.
Give each answer in its simplest form.

(a) $0.\dot{2}\dot{8}$ (b) $0.0\dot{3}$ (c) $0.\dot{9}6$ (d) $0.5\dot{2}\dot{1}$

(e) $0.3\dot{9}\dot{0}$ (f) $0.1\dot{2}3\dot{5}$ (g) $0.12\dot{6}$ (h) $0.5\dot{0}3\dot{5}$

Question 6: Convert the following recurring decimals to fractions.
Give each answer in its simplest form.

(a) 1.555... (b) 1.45454545... (c) 1.24444...

(d) 2.0717171... (e) 1.3599999... (f) 3.8123123...

Question 7: Convert the following recurring decimals to fractions.
Give each answer in its simplest form.

(a) $1.\dot{2}$ (b) $1.\dot{6}\dot{4}$ (c) $1.\dot{9}2$

(d) $2.0\dot{3}$ (e) $3.6\dot{5}\dot{9}$ (f) $8.6\dot{7}\dot{9}$

Apply

Question 1: Work out the following addition.
Give your answer as a simplified fraction

$$0.\dot{5} + 0.\dot{2}\dot{1}$$

Question 2: Work out the following
Give your answer as a simplified fraction

$$0.\dot{2}\dot{7} + 0.\dot{6}\dot{4} \div 0.5\dot{3}$$

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Question 3: Arrange in order from smallest to largest.

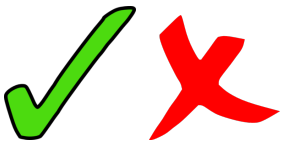
$$\frac{61}{330} \qquad 0.1\dot{7}\dot{8} \qquad 3^{-2} \qquad \frac{19}{110}$$

Question 4: Mark is converting $0.2\dot{5}\dot{1}$ into a fraction.

Can you spot any mistakes?

$$\begin{aligned} x &= 0.2\dot{5}\dot{1} \\ x &= 0.2515151\ldots \\ 10x &= 2.515151\ldots \\ 100x &= 251.515151\ldots \\ 90x &= 249 \\ x &= \frac{249}{90} \end{aligned}$$

Answers



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