Recurring Decimals to Fractions

SCAN ME

REVISE THIS TOPIC

1 Convert $0.\dot{5}$ to a fraction giving your answer in its simplest form. **[2 marks]**

$10x = 5.5555\ldots$

$x = 0.5555\ldots$

$9x = 5$

$x = \frac{5}{9}$

Answer $\frac{5}{9}$

2 Convert $0.\dot{7}\dot{1}$ to a fraction giving your answer in its simplest form. **[2 marks]**

$100x = 71.717171$

$x = 0.717171\ldots$

$99x = 71$

$x = \frac{71}{99}$

Answer $\frac{71}{99}$

$\frac{\quad}{4}$

3 Convert $0.\dot{4}\dot{5}$ to a fraction giving your answer in its simplest form. **[2 marks]**

$100x = 45.4545454545\ldots$

$x = 0.4545454545\ldots$

$99x = 45$

$x = \frac{45}{99}$ $\quad \frac{45}{99} = \frac{5}{11}$

Answer $\frac{5}{11}$

4 Convert $0.\dot{2}1\dot{4}$ to a fraction giving your answer in its simplest form. **[3 marks]**

$1000x = 214.214214214\ldots$

$x = 0.214214214\ldots$

$999x = 214$

$x = \frac{214}{999}$

Answer $\frac{214}{999}$

5 Convert $0.\dot{3}2\dot{4}$ to a fraction giving your answer in its simplest form. **[3 marks]**

$1000x = 324.324324324\ldots$

$x = 0.324324324\ldots$

$999x = 324$

$x = \frac{324}{999}$ $\quad \frac{324}{999} = \frac{36}{111} = \frac{12}{37}$

Answer $\frac{12}{37}$

6 Convert $0.5\dot{3}$ to a fraction giving your answer in its simplest form. **[3 marks]**

$100x = 53.3333$

$-\quad 10x = 5.3333\ldots$

$x = 0.5333\ldots$

$90x = 48$

$x = \frac{48}{90}$

$\frac{48}{90} = \frac{8}{15}$

Answer $\frac{8}{15}$

7 Convert $0.12\dot{4}$ to a fraction giving your answer in its simplest form. **[3 marks]**

$1000x = 124.4444\ldots$

$-\quad 100x = 12.4444\ldots$

$x = 0.1244\ldots$

$900x = 112$

$x = \frac{112}{900}$

$\frac{112}{900} = \frac{28}{225}$

Answer $\frac{28}{225}$

8 Convert $0.4\dot{2}\dot{3}$ to a fraction giving your answer in its simplest form. **[3 marks]**

$1000x = 423.2323\ldots$

$-\quad 10x = 4.2323\ldots$

$x = 0.4232\ldots$

$990x = 419$

$x = \frac{419}{990}$

Answer $\frac{419}{990}$

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9 Convert $0.0\dot{3}\dot{8}$ to a fraction giving your answer in its simplest form. **[3 marks]**

$1000x = 38.3838383\ldots$

$-\quad 10x = 0.3838383\ldots$

$x = 0.0383838\ldots$

$990x = 38$

$x = \frac{38}{990}$

$\frac{38}{990} = \frac{19}{495}$

Answer $\frac{19}{495}$

10 Convert $3.6\dot{2}$ to a fraction giving your answer in its simplest form. **[3 marks]**

$100x = 362.6262\ldots$

$x = 3.6262\ldots$

$99x = 359$

$x = \frac{359}{99}$

Answer $\frac{359}{99}$

11 Convert $0.3\dot{1}6\dot{1}$ to a fraction giving your answer in its simplest form. **[3 marks]**

$10000x = 3161.161161161\ldots$

$-\quad 10x = 3.161161161\ldots$

$x = 0.3161161161\ldots$

$9990x = 3158$

$x = \frac{3158}{9990}$

$\frac{3158}{9999} = \frac{1579}{4995}$

Answer $\frac{1579}{4995}$

12 Work out $0.6\dot{8} - 0.2\dot{7}$ **[5 marks]**

Give you answer as a fraction in its simplest form.

$100x = 68.88888\ldots$
$10x = 6.88888\ldots$
$x = 0.68888\ldots$
$90x = 62$
$x = \frac{62}{90}$

$100y = 27.77777\ldots$
$10y = 2.77777\ldots$
$y = 0.27777\ldots$
$90y = 25$
$y = \frac{25}{90}$

$\frac{62}{90} - \frac{25}{90} = \frac{37}{90}$

Answer $\frac{37}{90}$

13 Work out $0.5\dot{3} \times 0.1\dot{6}$ **[5 marks]**

Give you answer as a fraction in its simplest form.

$100x = 53.33333\ldots$
$10x = 5.33333\ldots$
$x = 0.53333\ldots$
$90x = 48$
$x = \frac{48}{90}$ $x = \frac{24}{45}$

$100y = 16.66666\ldots$
$10y = 1.66666\ldots$
$y = 0.16666\ldots$
$90y = 15$
$y = \frac{15}{90}$ $y = \frac{1}{6}$

$\frac{\cancel{24}^{4}}{45} \times \frac{1}{\cancel{6}_{1}} = \frac{4}{45}$

Answer $\frac{4}{45}$

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14 Work out $0.\dot{0}\dot{8} \div 3.\dot{6}\dot{3}$ **[5 marks]**

Give you answer as a fraction in its simplest form.

$100x = 8.88888\ldots$

$10x = 0.88888\ldots$

$x = 0.08888\ldots$

$90x = 8$

$x = \frac{8}{90}$

$100y = 363.636363\ldots$

$10y = 36.363636\ldots$

$- \quad y = 3.636363\ldots$

$99y = 360$

$y = \frac{360}{99}$

$\frac{\cancel{8}^{1}}{\cancel{90}_{10}} \times \frac{\cancel{99}^{11}}{\cancel{360}_{45}} = \frac{11}{450}$

Answer $\frac{11}{450}$

15 Work out $\left(0.\dot{2}9\dot{6}\right)^{\frac{2}{3}}$ **[5 marks]**

Give you answer as a fraction in its simplest form.

$1000x = 296.296296296\ldots$

$x = 0.296296296\ldots$

$999x = 296$

$x = \frac{296}{999}$

$x = \frac{2 \times 2 \times 2 \times \cancel{37}}{3 \times 3 \times 3 \times \cancel{37}}$

$x = \frac{8}{27}$

$\left(\frac{8}{27}\right)^{2/3} = \left(\frac{2}{3}\right)^2$

Answer $\frac{4}{9}$

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