8 Write $0.\dot{3}\dot{7}$ as a fraction.

$100x = 37.373737\ldots$

$x = 0.373737\ldots$

$99x = 37$

$\div 99 \quad \div 99$

$x = \frac{37}{99}$

$\frac{37}{99}$ [1]

9 Write the recurring decimal $0.\dot{2}\dot{7}$ as a fraction.

$100x = 27.272727\ldots$

$x = 0.272727\ldots$

$99x = 27$

$\div 99 \quad \div 99$

$x = \frac{27}{99} = \frac{3}{11}$

$\frac{3}{11}$ [1]

11 Write $0.\dot{0}\dot{4}$ as a fraction in its simplest form.

$100x = 4.040404\ldots$

$x = 0.040404\ldots$

$99x = 4$

$\div 99 \quad \div 99$

$x = \frac{4}{99}$

$\frac{4}{99}$ [1]

13 Write the recurring decimal $0.2\dot{6}$ as a fraction.
You must show all your working.

$10x = 2.6666\ldots$

$x = 0.2666\ldots$

$9x = 2.4$

$\div 9 \quad \div 9$

$x = \frac{2.4}{9}$

$\frac{2.4}{9} \xrightarrow{\times 10} \frac{24}{90} \xrightarrow{\div 6} \frac{4}{15}$

$\frac{4}{15}$ [2]

13 Write the recurring decimal $0.1\dot{7}$ as a fraction in its simplest form.
You must show all your working.

$10x = 1.7777\ldots$

$x = 0.1777\ldots$

$9x = 1.6$

$\div 9 \quad \div 9$

$x = \frac{1.6}{9}$

$\frac{1.6}{9} \xrightarrow{\times 10} \frac{16}{90} \xrightarrow{\div 2} \frac{8}{45}$

$\frac{8}{45}$ [3]

12 Write $0.4\dot{2}$ as a fraction in its simplest form.
You must show all your working.

$10x = 4.2222\ldots$

$x = 0.4222\ldots$

$9x = 3.8$

$\div 9 \quad \div 9$

$x = \frac{3.8}{9}$

$\frac{3.8}{9} \xrightarrow{\times 10} \frac{38}{90} \xrightarrow{\div 2} \frac{19}{45}$

$\frac{19}{45}$ [3]

13 Convert $0.2\dot{4}$ to a fraction.
You must show all your working and give your answer in its simplest form.

$10x = 2.4444\ldots$

$x = 0.2444\ldots$

$9x = 2.2$

$\div 9 \quad \div 9 \quad \times 10 \quad \div 2$

$x = \frac{2.2}{9} \quad \frac{22}{90} \quad \frac{11}{45}$

$\times 10 \quad \div 2$

$\frac{11}{45}$ [2]

14 Write $0.2\dot{5}$ as a fraction.

$10x = 2.5555\ldots$

$x = 0.2555\ldots$

$9x = 2.3$

$\div 9 \quad \div 9 \quad \times 10$

$x = \frac{2.3}{9} \quad \frac{23}{90}$

$\times 10$

$\frac{23}{90}$ [2]

16 Write $0.62\dot{1}$ as a fraction in its simplest form.
You must show all your working.

$100x = 62.121212\ldots$

$x = 0.6212121\ldots$

$99x = 61.5$

$\div 99 \quad \div 99$

$x = \frac{61.5}{99} \xrightarrow{\times 2} \frac{123}{198} \xrightarrow{\div 3} \frac{41}{66}$ $\quad \frac{41}{66}$ [3]

14 Write $0.58\dot{1}$ as a fraction.
You must show all your working and give your answer in its simplest form.

$100x = 58.181818\ldots$

$x = 0.5818181\ldots$

$99x = 57.6$

$\div 99 \quad \div 99$

$x = \frac{57.6}{99} \xrightarrow{\times 10} \frac{576}{990} \xrightarrow{\div 9} \frac{64}{110} \xrightarrow{\div 2} \frac{32}{55}$ $\quad \frac{32}{55}$ [3]

18 Write $0.4\dot{1}\dot{9}$ as a fraction in its simplest form.
You must show all your working.

$100x = 41.919191\ldots$

$x = 0.4191919\ldots$

$99x = 41.5$

$\div 99 \quad \div 99$

$x = \frac{41.5}{99} \xrightarrow{\times 2} \frac{83}{198}$

$\frac{83}{198}$ [3]

16 Write $0.3\dot{2}\dot{8}$ as a fraction in its simplest form.

$100x = 32.82828282\ldots$

$\dot{x} = 0.32828282\ldots$

$99x = 32.5$

$\div 99 \quad \div 99 \quad \times 2$

$x = \frac{32.5}{99} \quad \frac{65}{198}$

$\times 2$

$\frac{65}{198}$ [3]

17 Work out.

$\frac{5}{9} + 0.2\dot{8}$

Give your answer as a fraction in its simplest form.

$10x = 2.88888....$

$x = 0.28888....$

$9x = 2.6$

$\div 9 \quad \div 9 \quad \times 10 \quad \div 2$

$x = \frac{2.6}{9} \quad \frac{26}{90} \quad \frac{13}{45}$

$\times 10 \quad \div 2$

$\rightarrow \frac{5}{9} \times \frac{5}{5} + \frac{13}{45}$

$= \frac{25}{45} + \frac{13}{45} = \frac{38}{45}$

$\frac{38}{45}$ ..... [4]