1a) $\frac{1}{2} = 0.5$

2a) $\frac{1}{2} = 50\%$

3a) $43\% = 0.43$

4a) $0.5 = \frac{1}{2}$

5a) $\frac{5}{8}$

$\frac{1}{8} = 12.5\%$

$\frac{5}{8} = 12.5 \times 5$

$= 62\frac{1}{2}\%$

7a) $0.5\dot{5}$

$= 0.5555\dot{5}$

$= 55.6\dot{6}$

8a) $22\% = 0.22$

9a) $\frac{4}{5} = \frac{4}{5} \times 100$

$= 80\%$

10a) $0.51 = \frac{51}{100}$

1f) $\frac{1}{4} = 0.25$

2f) $\frac{1}{4} = 25\%$

3f) $105\% = 1.05$

4f) $0.9 = \frac{9}{10}$

5f) $\frac{1}{8} = 12\frac{1}{2}\%$

or $8\overline{\smash{)}1.\overset{2}{0}\overset{4}{0}0}^{\,0.125} = 12.5\%$

7f) $0.83\dot{8} = 0.83888\dot{8}$

$= 83.9\%$

8f) $61.4\dot{9}\dot{9}\% = 61.4949\dot{9}\%$

$= 0.615$

9f) $\frac{3}{16}$

$\frac{1}{8} = 12\frac{1}{2}\%$

$\frac{1}{16} = 6\frac{1}{4}\%$

$\frac{3}{16} = 18\frac{3}{4}\%$

10f) $0.871 = \frac{871}{1000}$

Classwork Q1 - Q10 parts b, c, d, e

11a) $49\% = \dfrac{49}{100}$

11f) $19\% = \dfrac{19}{100}$

12a) $\dfrac{1}{16} = 0.0625$

12f) $\dfrac{1}{32} = 0.0313$

13a) $\dfrac{1}{16} = 6.25\%$

13f) $\dfrac{1}{32} = 3.13\%$

14a) $0.32 = \dfrac{32}{100} = \dfrac{8}{25}$

14f) $0.265 = \dfrac{265}{1000} = \dfrac{53}{200}$

15a) $55\% = \dfrac{55}{100} = \dfrac{11}{20}$

15f) $18.5\% = \dfrac{18.5}{100} = \dfrac{37}{200}$

16   25, 20, 5 are all factors of 100 so decimals would terminate

   $\dfrac{8}{11}$ would be recurring as a decimal

17a) $0.111... = 0.\dot{1}$

17f) $0.0126126126...$
   $0.0\dot{1}2\dot{6}$

18 a) $\dfrac{1}{3} = 3\overline{)1.\overset{1}{0}\overset{1}{0}\overset{1}{0}}$ $\begin{matrix}0.333\end{matrix}$

   $= 0.\dot{3}$

18f $\dfrac{5}{6}$ $6\overline{)5.\overset{5}{0}\overset{2}{0}\overset{2}{0}\overset{2}{0}\overset{2}{0}}$ $\begin{matrix}0.8333\end{matrix}$

   $= 0.8\dot{3}$

Classwork Q11 - Q18 parts b, c, d, e

Exercise 5.3S

1 Write these fractions as decimals.

   a $\frac{1}{2}$ **b** $\frac{3}{4}$ **c** $\frac{2}{5}$

   d $\frac{1}{10}$ **e** $\frac{1}{5}$ **f** $\frac{1}{4}$

2 Convert each of the decimals from question **1** to a percentage.

3 Convert these percentages to decimals.

   a 43%   **b** 86%   **c** 94%

   d 45.5%   **e** 3.75%   **f** 105%

4 Convert these decimals to fractions, using a mental method.

   a 0.5   **b** 0.25   **c** 0.2

   d 0.125   **e** 0.75   **f** 0.9

5 Convert each fraction to a percentage, using a written method. Show your working.

   a $\frac{5}{8}$ **b** $\frac{4}{5}$ **c** $\frac{7}{8}$

   d $\frac{3}{5}$ **e** $\frac{3}{8}$ **f** $\frac{1}{8}$

6 Use a calculator to check your answers to question **5**.

7 Convert these decimals to percentages.

   a $0.5\dot{5}$ **b** $0.3\dot{4}$ **c** $0.7\dot{5}$

   d $0.51\dot{2}\dot{8}$ **e** $0.43\dot{7}$ **f** $0.83\dot{8}$

   g $0.8\dot{3}\dot{8}$ **h** $1.0\dot{5}$

8 Convert these percentages to decimals.

   a 22%   **b** 18.5%   **c** $55.5\dot{5}$%

   d $35.\dot{5}$%   **e** $6.5\dot{6}$%   **f** $61.4\dot{9}$%

   g $54.4\dot{6}$%   **h** $152.\dot{2}$%

9 Convert these fractions to percentages. You should be able to do these without a calculator.

   a $\frac{4}{5}$ **b** $\frac{3}{20}$ **c** $\frac{7}{8}$ **d** $\frac{3}{4}$

   e $\frac{7}{25}$ **f** $\frac{3}{16}$ **g** $\frac{9}{20}$ **h** $\frac{7}{50}$

10 Convert these decimals to fractions.

   a 0.51   **b** 0.43   **c** 0.413

   d 0.719   **e** 0.91   **f** 0.871

11 Convert these percentages to fractions.

   a 49%   **b** 53%   **c** 73%

   d 81%   **e** 37%   **f** 19%

12 Use a calculator to convert these fractions to decimals.

   a $\frac{1}{16}$ **b** $\frac{7}{25}$ **c** $\frac{7}{125}$

   d $\frac{3}{40}$ **e** $\frac{7}{16}$ **f** $\frac{1}{32}$

13 Convert the decimal answers from question **12** to percentages.

14 Convert these decimals to fractions. Give your answers in their simplest forms.

   a 0.32   **b** 0.55   **c** 0.44

   d 0.155   **e** 0.64   **f** 0.265

15 Convert these percentages to fractions. Give your answers in their simplest forms.

   a 55%   **b** 62%   **c** 84%

   d 65%   **e** 72%   **f** 18.5%

16 Which of these fractions will make recurring decimals? Explain your answer.

   $\frac{22}{25}$ $\frac{17}{20}$ $\frac{8}{11}$ $\frac{2}{5}$

17 Write each of these recurring decimals using 'dot' notation.

   a 0.111...   **b** 0.555...

   c 0.755 55...   **d** 0.346 346 346...

   e 0.765 6565...   **f** 0.012 6126126...

18 Use a written method to convert each fraction to a decimal. Use the 'dot' notation to represent recurring decimals.

   a $\frac{1}{3}$ **b** $\frac{1}{6}$ **c** $\frac{2}{3}$

   d $\frac{1}{7}$ **e** $\frac{1}{9}$ **f** $\frac{5}{6}$

19 Convert your decimal answers from question **18** to percentages.

20 Use a calculator to check your answers to questions **18** and **19**.

21 Use an appropriate method to convert these fractions to decimals.

   a $\frac{3}{7}$ **b** $\frac{3}{16}$ **c** $\frac{17}{80}$

   d $\frac{5}{9}$ **e** $\frac{4}{25}$ **f** $\frac{5}{7}$