1. Express $0.\overline{78}$ as a fraction.

\[
x = 0.\overline{78} = \frac{78}{99}
\]

\[
x = \frac{26}{33}
\]

[2]

2. Convert $0.1\overline{72}$ to a fraction in its lowest terms.

\[
x = 0.1\overline{72} = \frac{172}{999}
\]

\[
x = \frac{57}{333}
\]

[3]

3. Prove algebraically that the recurring decimal $0.2\overline{5}$ has the value $\frac{23}{90}$

\[
x = 0.2\overline{5} = \frac{25}{99}
\]

\[
x = \frac{23}{90}
\]

[2]

4. Circle the decimal that is closest in value to $\frac{2}{3}$

- $0.6$
- $0.66$
- $0.667$
- $0.670$

[1]

5. a) Write $\frac{5}{11}$ as a recurring decimal.

\[
5 \div 11 = 0.\overline{45}
\]

\[
\frac{5}{11} = 0.\overline{45}
\]

[2]
c) Write \(0.\overline{36}\) as a fraction in its lowest term

\[
\begin{align*}
x &= 0.363636\ldots \\
100x &= 36.363636\ldots \\
99x &= 36 \\
x &= \frac{36}{99} = \frac{4}{11} = 0.\overline{36} = \frac{4}{11}
\end{align*}
\]

[3]

6. Prove algebraically that the recurring decimal \(0.\overline{318}\) can be written as \(\frac{7}{22}\)

\[
\begin{align*}
x &= 0.3181818\ldots \\
1000x &= 318.181818\ldots \\
999x &= 315.181818\ldots \\
x &= \frac{315}{999} = \frac{315}{1002} = \frac{198}{66} = \frac{21}{22} = \frac{7}{22}
\end{align*}
\]

[2]

7. Circle the fraction that is equivalent to 0.05% 

\[
\begin{align*}
\frac{1}{2000} & \quad \frac{1}{500} & \quad \frac{1}{200} & \quad \frac{1}{50} & \quad \frac{2}{100} \\
0.5\% & \quad 190 & \quad \frac{1}{200} & \quad 0.5\% & \quad 290
\end{align*}
\]

[1]