Fractions, Decimals \& Percentages (H)
A collection of 9-1 Maths GCSE Sample and Specimen questions from AQA, OCR, Pearson-Edexcel and WJEC Eduqas.

| Name: | Mel@uostMaths |
| :---: | :---: |
| Total Marks: |  |

1. Express $0.7 \grave{8}$ as a fraction.

$$
3 \longdiv { 2 6 }
$$

$$
\begin{equation*}
\frac{33}{109} \tag{2}
\end{equation*}
$$

$$
\begin{aligned}
& \text { action. } \begin{aligned}
x & =0.7878 \ldots . . \\
100 x & =78.7878 \ldots \\
99 x & =78 \\
\therefore \quad x & =\frac{78}{99} \quad \therefore x=\frac{26}{33}
\end{aligned}
\end{aligned}
$$

$3 \longdiv { 9 9 }$
2. Convert $0.1 \dot{1} \dot{2}$ to a fraction in its lowest terms.

$$
\text { (1) } \begin{align*}
& x=0.1727272 \cdots \\
& 100 x=17.2727272  \tag{3}\\
& 99 x=17.1 \\
& x=\frac{17.1}{99}=\frac{171}{990}=\frac{57}{330}=\frac{19}{110} \\
& 3117
\end{align*}
$$

3. Prove algebraically that the recurring decimal 0.25 has the value $\frac{23}{90}$ $x=0.255555 \ldots$.
$10 x=2.555555 \ldots$
$100 x=25.55555 \ldots$
$90 x=23$
4. Circle the decimal that is closest in value to $\frac{2}{3} \quad 0.666666$

$$
\begin{equation*}
0.60 .660 .6670 \tag{1}
\end{equation*}
$$

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

$$
5 \div 11
$$

$$
\begin{equation*}
\frac{0.4545}{1 1 \longdiv { 5 . 5 0 ^ { 5 } 0 ^ { 5 } 0 } 0} \quad \frac{5}{11}=0.45 \tag{2}
\end{equation*}
$$

c) Write $0 . \dot{3} \dot{6}$ as a fraction in its lowest term

$$
\begin{align*}
x & =0.363636 \ldots \\
100 x & =36 \cdot 363636 \ldots \\
99 x & =36 \\
x & =\frac{36}{99}=\frac{12}{33}=\frac{4}{11} \quad 0 \cdot 36=\frac{4}{11} \tag{3}
\end{align*}
$$

6. Prove algebraically that the recurring decimal 0.318 can be written as $\frac{7}{22} \quad 198$

$$
\begin{align*}
x & =0.3181818 \ldots \\
\frac{100 x}{99 x} & =31.818 \\
x & =\frac{31.5}{99}=\frac{315}{990}=\frac{63}{198}=\frac{21}{66}=\frac{7}{22} \tag{2}
\end{align*}
$$

7. Circle the fraction that is equivalent to $0.05 \%$

$$
\begin{array}{cccc}
\frac{1}{2000} & \frac{1}{500} & \frac{1}{200} & \frac{1}{50} \frac{2}{100}  \tag{1}\\
19=\frac{1}{100} & 0.5 \%_{0} & 2 q_{0} \\
& & x
\end{array}
$$

$$
0: 5 \%=\frac{1}{200}
$$

