Terminating and recurring decimals

6 questions | 12 marks

Equivalent correct methods earn the corresponding marks.

1. Write $\frac{3}{4}$ as a decimal. [2 marks]

$\frac{3}{4} = \frac{75}{100} = 0.75$.

Answer: 0.75

2. Write $\frac{7}{20}$ as a decimal. [2 marks]

$\frac{7}{20} = \frac{35}{100} = 0.35$.

Answer: 0.35

3. Write $\frac{2}{3}$ using recurring-decimal notation. [2 marks]

Division gives 0.6666…, with the digit 6 repeating.

Answer: $0.\overline{6}$

4. Write $\frac{11}{6}$ using recurring-decimal notation. [2 marks]

$\frac{11}{6} = 1 + \frac{5}{6} = 1.8333\ldots$.

Answer: $1.8\overline{3}$

5. Decide whether $\frac{6}{15}$ terminates, and explain. [2 marks]

$\frac{6}{15} = \frac{2}{5} = 0.4$; reduce before checking the denominator.

Answer: It terminates at 0.4.

6. $\frac{2}{7} = 0.285714285714\ldots$. Round it to three decimal places. [2 marks]

Keep 0.285 initially; the next digit is 7.

Round the thousandths digit up, giving 0.286.

Answer: 0.286