3.5 Answers

3.5.1 Solution to 3.2 Exercise

Answer 1

(i) $\frac{7}{3} \Rightarrow 3\overline{)7} \Rightarrow \begin{array}{r} 2 \\ 3\overline{)7} \end{array} r\ 1 \Rightarrow 2 + \frac{1}{3}$

$$\frac{7}{3} = 2\frac{1}{3}$$

[2 marks]

(ii) $\frac{56}{5} \Rightarrow 5\overline{)56} \Rightarrow \begin{array}{r} 11 \\ 5\overline{)56} \end{array} r\ 1 \Rightarrow 11 + \frac{1}{5}$

$$\frac{56}{5} = 11\frac{1}{5}$$

[2 marks]

(iii) $\frac{93}{4} \Rightarrow 4\overline{)93} \Rightarrow \begin{array}{r} 23 \\ 4\overline{)93} \end{array} r\ 1 \Rightarrow 23 + \frac{1}{4}$

$$\frac{93}{4} = 23\frac{1}{4}$$

[2 marks]

(iv) $\frac{31}{7} \Rightarrow 7\overline{)31} \Rightarrow \begin{array}{r} 04 \\ 7\overline{)31} \end{array} r\ 3 \Rightarrow 4 + \frac{3}{7}$

$$\frac{31}{7} = 4\frac{3}{7}$$

[2 marks]

Answer 2

(i)

$$4\frac{2}{5} = 4 + \frac{2}{5}$$

$$= \frac{4}{1} \times \mathbf{1} + \frac{2}{5} \qquad \text{Because } 4 = \frac{4}{1} \times 1$$

$$= \frac{4}{1} \times \frac{\mathbf{5}}{\mathbf{5}} + \frac{2}{5} \qquad \text{Lesson 1 technique}$$

$$= \frac{20}{5} + \frac{2}{5} \qquad \text{Lesson 1 technique}$$

$$= \frac{22}{5} \qquad \text{Lesson 1 technique}$$

[2 marks]

(ii)

$$9\frac{3}{4} = 9 + \frac{3}{4}$$

$$= \frac{9}{1} \times \mathbf{1} + \frac{3}{4} \qquad \text{Because } 9 = \frac{9}{1} \times 1$$

$$= \frac{9}{1} \times \frac{\mathbf{4}}{\mathbf{4}} + \frac{3}{4} \qquad \text{Lesson 1 technique}$$

$$= \frac{36}{4} + \frac{3}{4} \qquad \text{Lesson 1 technique}$$

$$= \frac{39}{4} \qquad \text{Lesson 1 technique}$$

[2 marks]

(iii)

$$50\frac{5}{6} = 50 + \frac{5}{6}$$

$$= \frac{50}{1} \times \mathbf{1} + \frac{5}{6} \qquad \text{Because } 50 = \frac{50}{1} \times 1$$

$$= \frac{50}{1} \times \frac{\mathbf{6}}{\mathbf{6}} + \frac{5}{6} \qquad \text{Lesson 1 technique}$$

$$= \frac{300}{6} + \frac{5}{6} \qquad \text{Lesson 1 technique}$$

$$= \frac{305}{6} \qquad \text{Lesson 1 technique}$$

[2 marks]

(iv)

$$108\frac{1}{3} = 108 + \frac{1}{3}$$

$$= \frac{108}{1} \times \mathbf{1} + \frac{1}{3} \qquad \text{Because } 108 = \frac{108}{1} \times 1$$

$$= \frac{108}{1} \times \frac{3}{3} + \frac{1}{3} \qquad \text{Lesson 1 technique}$$

$$= \frac{324}{3} + \frac{1}{3} \qquad \text{Lesson 1 technique}$$

$$= \frac{325}{3} \qquad \text{Lesson 1 technique}$$

[2 marks]

3.5.2 Solution to 3.4 Exercise

Answer 1

(i) $8\frac{3}{11} = \frac{8 \times 11 + 3}{11}$

$= \frac{88 + 3}{11}$

$= \frac{91}{11}$

(ii) $15\frac{2}{3} = \frac{15 \times 3 + 2}{3}$

$= \frac{45 + 2}{3}$

$= \frac{47}{3}$

(iii) $7\frac{9}{10} = \frac{7 \times 10 + 9}{10}$

$= \frac{70 + 9}{10}$

$= \frac{79}{10}$

(iv) $25\frac{3}{4} = \frac{25 \times 4 + 3}{4}$

$= \frac{100 + 3}{4}$

$= \frac{103}{4}$

[8 marks]

Answer 2

(i) {Multiples of 6} = {6, 12, **18**, 24, 30, 36, ...}

[1 mark]

(ii) {Multiples of 9} = {9, **18**, 27, 36, 45, 54 ...}

[1 mark]

(iii) *lcm*{6, 9} = 18

[1 mark]

(iv) $3\frac{5}{6} - 2\frac{5}{9} = \frac{3 \times 6 + 5}{6} - \frac{2 \times 9 + 5}{9}$

$= \frac{23}{6} \times \mathbf{1} - \frac{23}{9} \times \mathbf{1}$

$= \frac{23}{6} \times \frac{\mathbf{3}}{\mathbf{3}} - \frac{23}{9} \times \frac{\mathbf{2}}{\mathbf{2}}$ Use *lcm*{6,9} is 18

$= \frac{69}{18} - \frac{46}{18}$

$= \frac{23}{18}$

$= 1\frac{5}{18}$

[8 marks]

Answer 3

(i) {Multiples of 4} = {4, 8, 12, 16, **20**, 24, ...}

[1 mark]

(ii) {Multiples of 10} = {10, **20**, 30, 40, 50, 60, ...}

[1 mark]

(iii) $lcm\{4, 10\} = 20$

[1 mark]

(iv)
$$5\frac{3}{4} + 3\frac{3}{10} = \frac{5 \times 4 + 3}{4} + \frac{3 \times 10 + 3}{10}$$
$$= \frac{23}{4} \times \mathbf{1} + \frac{33}{10} \times \mathbf{1}$$
$$= \frac{23}{4} \times \frac{\mathbf{5}}{\mathbf{5}} + \frac{33}{10} \times \frac{\mathbf{2}}{\mathbf{2}}$$ Use $lcm\{4,10\}$ is 20
$$= \frac{115}{20} + \frac{66}{20}$$
$$= \frac{181}{20}$$
$$= 9\frac{1}{20}$$

[8 marks]