



1

a. Write $\frac{17}{5}$ as a mixed number.

b. Write $\frac{29}{8}$ as a mixed number.

(2 marks)

a)

$$17 \div 5 = 3 \text{ remainder } 2$$

$$3 \frac{2}{5}$$

b)

$$29 \div 8 = 3 \text{ remainder } 5$$

$$3 \frac{5}{8}$$

2

a. Write $2\frac{3}{4}$ as an improper fraction.

b. Write $5\frac{2}{3}$ as an improper fraction.

(2 marks)

a)

$$2 \times 4 + 3 = 11$$

$$\frac{11}{4}$$

b)

$$5 \times 3 + 2 = 17$$

$$\frac{17}{3}$$

- 3 Write these numbers in order of size, smallest first.

$$\frac{17}{6} \quad 2\frac{3}{4} \quad \frac{5}{2} \quad 2\frac{2}{3}$$

(3 marks)

$$\frac{17}{6} = 2\frac{5}{6} = 2.8\bar{3}$$

$$2\frac{3}{4} = 2.75$$

$$\frac{5}{2} = 2\frac{1}{2} = 2.5$$

$$2\frac{2}{3} = 2.6\bar{7}$$

$$\boxed{\frac{5}{2}, 2\frac{2}{3}, 2\frac{3}{4}, \frac{17}{6}}$$

4 $x + 1\frac{2}{5} = 4\frac{1}{10}$

Work out the value of x . Give your answer as a mixed number.

(2 marks)

$$x = 4\frac{1}{10} - 1\frac{2}{5}$$

$$\frac{41}{10} - \frac{14}{10} = \frac{27}{10}$$

$$\boxed{x = 2\frac{7}{10}}$$

5

Work out $3\frac{1}{3} \div 2\frac{1}{2}$

Give your answer as a mixed number in its simplest form.

(3 marks)

Write as improper fractions

$$3\frac{1}{3} = \frac{10}{3} \text{ and } 2\frac{1}{2} = \frac{5}{2}$$

To divide by $5/2$, multiply by its reciprocal $2/5$

$$(5/2) \times (2/5) = 1, \text{ so this undoes multiplication by } 5/2$$

Dividing by $\frac{5}{2}$ is the same as multiplying by $\frac{2}{5}$

$$\frac{10}{3} \times \frac{2}{5} = \frac{20}{15}$$

Simplify

$$\frac{20}{15} = \frac{4}{3} = 1\frac{1}{3}$$

$$\boxed{1\frac{1}{3}}$$

6

a. Work out $2\frac{1}{3} + 1\frac{3}{4}$. Give your answer as a mixed number.b. Work out $3\frac{1}{5} - 1\frac{7}{10}$. Give your answer as a mixed number.

(4 marks)

a)

$$\frac{7}{3} + \frac{7}{4}$$

$$\frac{28}{12} + \frac{21}{12} = \frac{49}{12}$$

$$\boxed{4\frac{1}{12}}$$

b)

$$\frac{16}{5} - \frac{17}{10}$$

$$\frac{32}{10} - \frac{17}{10} = \frac{15}{10}$$

$$\boxed{1\frac{1}{2}}$$

7 Work out $\frac{7}{8} + \frac{11}{12}$. Give your answer as a mixed number.

(3 marks)

$$\frac{7}{8} = \frac{21}{24}, \quad \frac{11}{12} = \frac{22}{24}$$

$$\frac{21}{24} + \frac{22}{24} = \frac{43}{24}$$

$$\boxed{1 \frac{19}{24}}$$

8 Show that $2\frac{2}{3} \times 1\frac{7}{8} = 5$

(3 marks)

Write both numbers as improper fractions

$$2\frac{2}{3} = \frac{8}{3} \text{ and } 1\frac{7}{8} = \frac{15}{8}$$

Multiply

$$\frac{8}{3} \times \frac{15}{8} = \frac{120}{24}$$

Simplify

$$\frac{120}{24} = 5, \text{ as required. (Or cancel the 8s first: } \frac{15}{3} = 5.)$$

9 Show that $2\frac{1}{4} \times 1\frac{1}{3} = 3$.

(3 marks)

$$2\frac{1}{4} = \frac{9}{4}$$

$$1\frac{1}{3} = \frac{4}{3}$$

$$\frac{9}{4} \times \frac{4}{3} = \frac{36}{12}$$

$$\boxed{= 3}$$

10

A recipe needs $1\frac{3}{4}$ cups of flour. Marcus makes $2\frac{1}{2}$ times the recipe.

How much flour does he need? Give your answer as a mixed number of cups.

(3 marks)

$$1\frac{3}{4} = \frac{7}{4}, 2\frac{1}{2} = \frac{5}{2}$$

$$\frac{7}{4} \times \frac{5}{2} = \frac{35}{8}$$

$$35 \div 8 = 4 \text{ remainder } 3$$

$$\boxed{4\frac{3}{8} \text{ cups}}$$

11

a. Work out $\frac{7}{8} - \frac{2}{5}$

b. Show that $1\frac{2}{3} \times 2\frac{1}{4} = 3\frac{3}{4}$

(5 marks)

a) Use denominator 40

$$\frac{7}{8} = \frac{35}{40} \text{ and } \frac{2}{5} = \frac{16}{40}$$

$$a) \frac{35}{40} - \frac{16}{40} = \frac{19}{40}$$

b) Write as improper fractions

$$1\frac{2}{3} = \frac{5}{3} \text{ and } 2\frac{1}{4} = \frac{9}{4}$$

$$b) \frac{5}{3} \times \frac{9}{4} = \frac{45}{12} = \frac{15}{4} = 3\frac{3}{4}, \text{ as required}$$

12

A ribbon is $6\frac{1}{2}$ m long. It is cut into pieces that are each $\frac{3}{4}$ m long.

How many whole pieces can be cut, and how much ribbon is left over?

(4 marks)

$$6\frac{1}{2} = \frac{13}{2}$$

$$\frac{13}{2} \div \frac{3}{4} = \frac{13}{2} \times \frac{4}{3} = \frac{26}{3}$$

$$\frac{26}{3} = 8\frac{2}{3} \text{ so 8 whole pieces}$$

$$8 \times \frac{3}{4} = 6 \text{ m}$$

$$6\frac{1}{2} - 6 = \frac{1}{2}$$

8 pieces, $\frac{1}{2}$ m left