

Fractions Student Book - Series H

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Author of The Topics and Topic Tests: AS Kalra

Topic 1: Equivalent fractions

d $\frac{1}{10} = \frac{1}{100}$ **b** $\frac{1}{3} = \frac{1}{6}$ **a** $\frac{1}{2} = \frac{1}{4}$ **c** $\frac{1}{5} = \frac{1}{10}$ **f** $\frac{1}{5} = \frac{1}{100}$ **g** $\frac{3}{5} = \frac{3}{40}$ **e** $\frac{7}{10} = \frac{1}{50}$ **h** $\frac{3}{4} = \frac{16}{16}$ k $\frac{5}{6} = \frac{1}{24}$ i $\frac{2}{7} = \frac{21}{21}$ **j** $\frac{3}{8} = \frac{1}{64}$ $1 \quad \frac{4}{7} = \frac{35}{35}$ **m** $\frac{7}{8} = \frac{1}{24}$ **n** $\frac{2}{9} = \frac{1}{81}$ **o** $\frac{3}{4} = \frac{1}{20}$ **p** $\frac{2}{3} = \frac{8}{3}$

QUESTION 1 Complete the following to make equivalent fractions.

QUESTION **2** Find the missing number to complete the equation.

- **a** $\frac{5}{20} = \frac{4}{4}$ **b** $\frac{18}{36} = \frac{1}{20}$ **c** $\frac{8}{20} = \frac{4}{20}$ **d** $\frac{16}{20} = \frac{4}{20}$
- **e** $\frac{14}{20} = \frac{1}{10}$ **f** $\frac{1}{4} = \frac{1}{100}$ **g** $\frac{6}{14} = \frac{3}{100}$ **h** $\frac{12}{36} = \frac{1}{100}$
- **i** $\frac{5}{9} = \frac{30}{9}$ **j** $\frac{3}{8} = \frac{24}{9}$ **k** $\frac{2}{9} = \frac{30}{90}$ **l** $\frac{3}{7} = \frac{30}{9}$

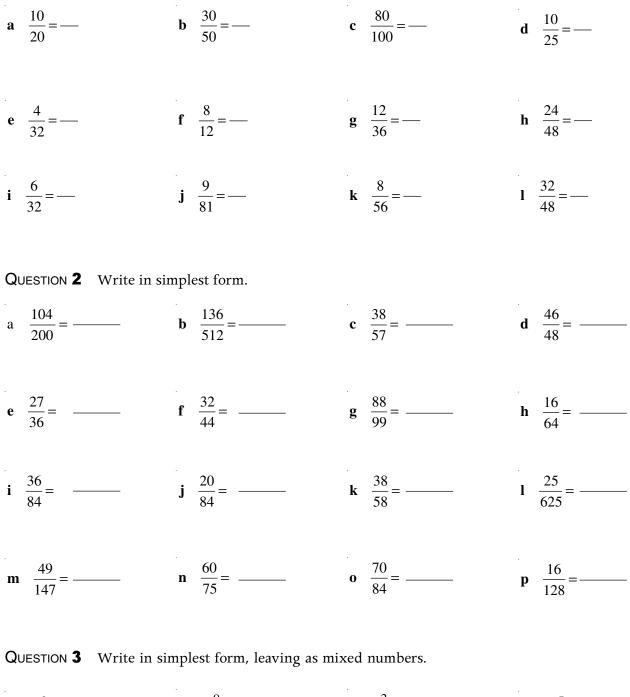
QUESTION **3** Complete these equivalent fractions.

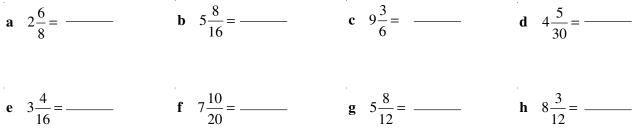
a
$$\frac{3}{4} = \frac{16}{64}$$

b $\frac{12}{96} = \frac{3}{8}$
c $\frac{7}{9} = \frac{28}{64}$
d $\frac{4}{5} = \frac{16}{250}$
d $\frac{4}{5} = \frac{16}{250}$
h $\frac{15}{20} = \frac{3}{12}$

Topic 2: Simplifying fractions

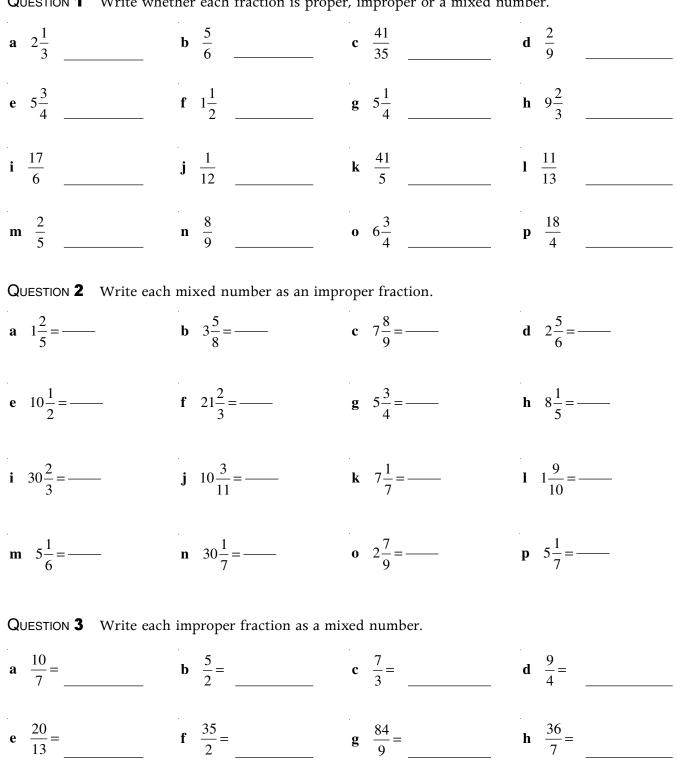
QUESTION 1 Write the following fractions in simplest form.





i $\frac{41}{8} =$

Topic 3: Proper fractions, improper fractions and mixed numbers



QUESTION **1** Write whether each fraction is proper, improper or a mixed number.

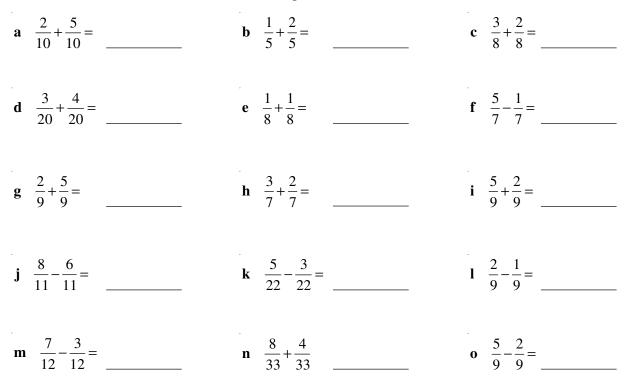
k $\frac{63}{8} =$

j $\frac{49}{5} =$

 $1 \frac{52}{7} =$

Topic 4: Addition and subtraction of fractions with the same denominator

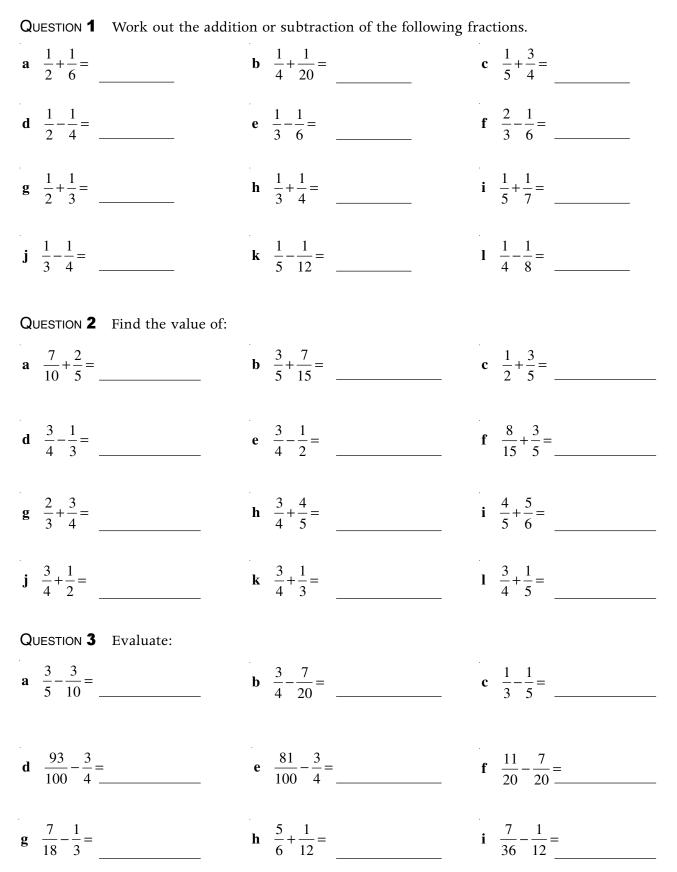
QUESTION 1 Add or subtract the following fractions.



QUESTION 2 Add or subtract the following fractions, giving answers as mixed numbers.

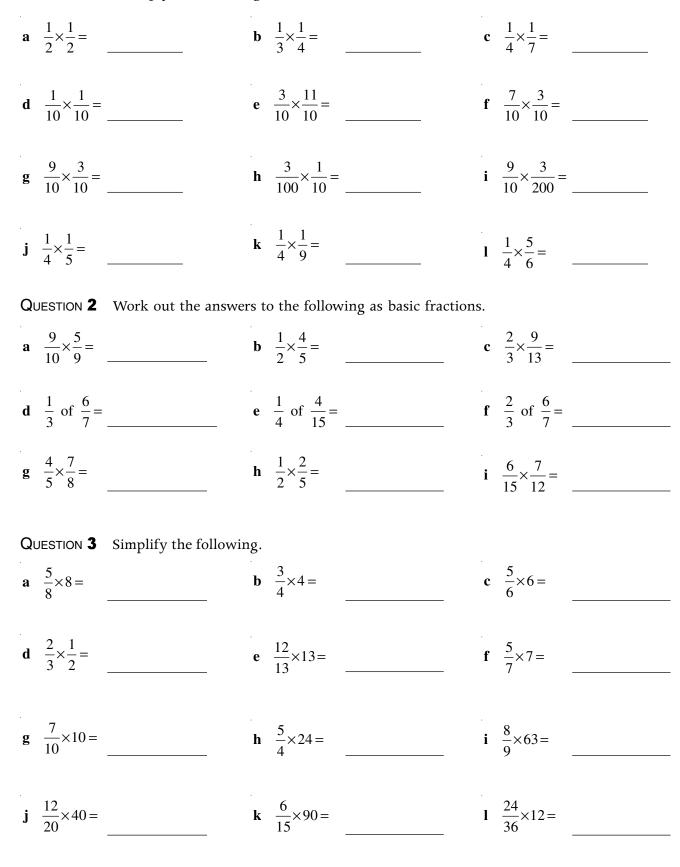
| a $\frac{4}{10} + \frac{7}{10} =$ | b $\frac{3}{4} + \frac{3}{4} =$ | c $\frac{4}{5} + \frac{3}{5} =$ |
|---|---|--|
| d $\frac{17}{20} + \frac{8}{20} =$ | $e \frac{19}{10} - \frac{3}{10} =$ | f $\frac{45}{38} - \frac{1}{38} =$ |
| $\mathbf{g} \frac{6}{5} + \frac{8}{5} =$ | h $\frac{13}{10} - \frac{2}{10} =$ | $i \frac{48}{20} - \frac{21}{20} =$ |
| $\mathbf{j} \frac{17}{3} - \frac{10}{3} =$ | $\mathbf{k} \frac{15}{7} - \frac{4}{7} =$ | $\mathbf{I} \frac{27}{10} - \frac{12}{10} = _$ |
| $\mathbf{m} \frac{251}{100} - \frac{50}{100} = _$ | $\mathbf{n} \frac{1361}{1000} - \frac{261}{1000} = \underline{\qquad}$ | o $\frac{18}{11} - \frac{5}{11} =$ |

Topic 5: Addition and subtraction of fractions with different denominators

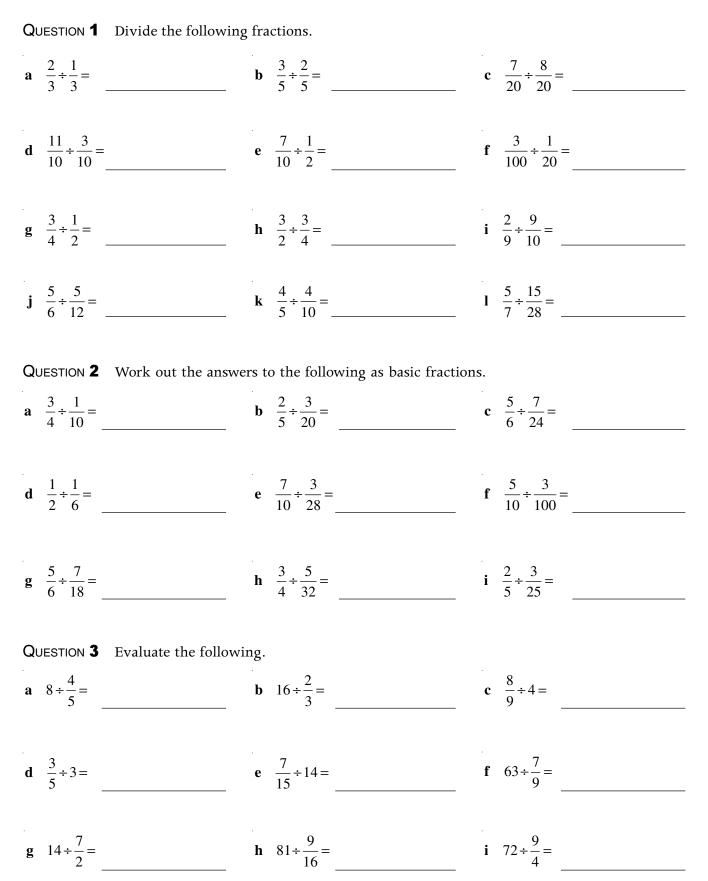


Topic 6: Multiplication of fractions

QUESTION **1** Multiply the following fractions.



Topic 7: Division of fractions

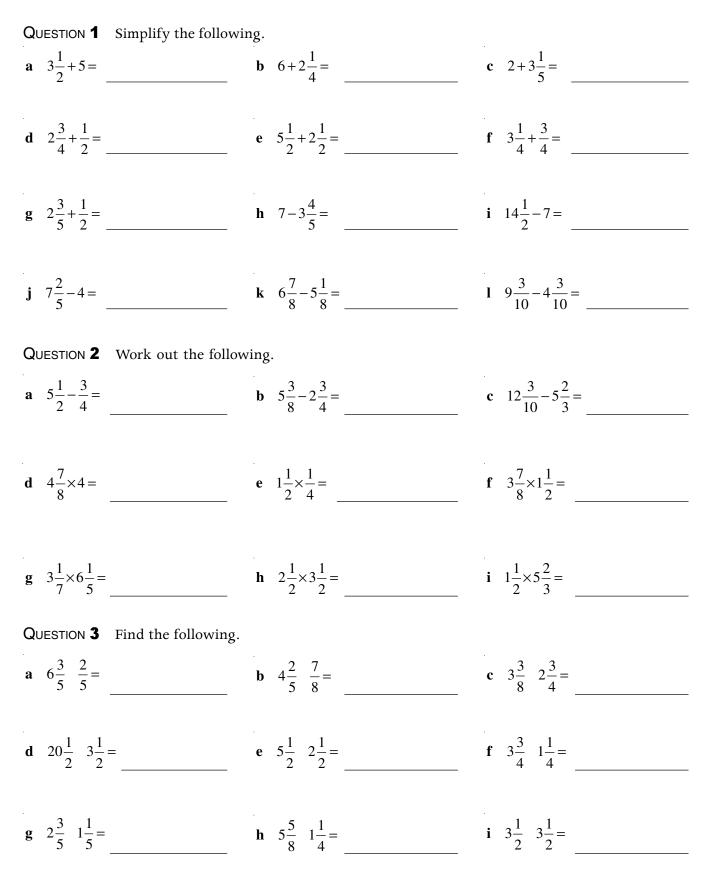


Topic 8: Finding a fraction of a number

QUESTION **1** Work out the answers to the following. c $\frac{1}{5}$ of 10 hours= **a** $\frac{1}{2}$ of \$27= **b** $\frac{3}{4}$ of \$400= **d** $\frac{2}{3}$ of 1 hour = e $\frac{3}{5}$ of 1 tonne = $f = \frac{3}{5}$ of 200 grams = i $\frac{2}{5}$ of 1 metre = $\mathbf{g} = \frac{7}{10}$ of 2 hours= **h** $\frac{2}{5}$ of 1 year = **j** $\frac{3}{5}$ of \$75 = **k** $\frac{3}{8}$ of \$64 = $1 \frac{1}{5}$ of 1kg = QUESTION **2** Find the following. **c** $\frac{4}{5}$ of \$175= **b** $\frac{1}{5}$ of 120= **a** $\frac{1}{2}$ of 62 = **d** $\frac{19}{100}$ of 700= **f** $\frac{1}{16}$ of 480= e $\frac{5}{12}$ of 120= $g = \frac{5}{16}$ of 80 = **h** $\frac{1}{8}$ of 1 day = i $\frac{1}{4}$ of 60 minutes = QUESTION **3** Work out the following. **a** $\frac{3}{4}$ of \$88= **b** $\frac{3}{5}$ of 240 = **c** $\frac{2}{7}$ of 770 = **d** $\frac{2}{5}$ of 55 = $e \frac{3}{5}$ of 600 = **f** $\frac{1}{3}$ of 270 =

g $\frac{7}{100}$ of 1 century = _____ **h** $\frac{1}{4}$ of 52 weeks = _____ **i** $\frac{2}{5}$ of 2 km = _____

Topic 9: Fractions with mixed numbers



| Тор | bic 10: Problem solving with fractions |
|-----|---|
| 1 | Find the sum of $\frac{2}{5}$, $\frac{3}{4}$ and $\frac{1}{10}$ |
| 2 | Divide the sum of $\frac{7}{8}$ and $\frac{3}{10}$ by $\frac{1}{2}$ |
| 3 | Subtract the difference between $\frac{1}{2}$ and $\frac{1}{3}$ from the sum of $\frac{1}{2}$ and $\frac{1}{3}$ |
| 4 | In a school of 800 students, $\frac{1}{5}$ of the students have brown eyes. How many do not have brown eyes? |
| 5 | If $\frac{2}{3}$ of a cake is shared equally among four people, what fraction of the cake would each receive? |
| 6 | Find the difference between $20\frac{3}{4}$ and $9\frac{1}{2}$ and multiply this by $2\frac{1}{3}$ |
| 7 | A rectangle has length $3\frac{1}{4}$ cm and width $1\frac{3}{4}$ cm. Find the perimeter of the rectangle. |
| 8 | A car tank when $\frac{3}{4}$ full contains 45 litres. What is the capacity of the tank? |
| 9 | Alka bought $3\frac{2}{5}$ kg of apples on one day and $4\frac{3}{4}$ kg the next day. How many kilograms of apples did she buy in all? |
| 10 | An aeroplane flew 1200 km in $2\frac{3}{4}$ hours. What was its average speed? |
| 11 | How many pieces of wood each $1\frac{1}{3}$ metres long can be cut from a board 8 metres long? |
| 12 | A square has side length $5\frac{3}{4}$ cm. Find its area. |
| | Hari works for $3\frac{1}{2}$ hours on Saturday and $5\frac{2}{5}$ hours on Sunday. Find the total number of hours he works. |

Fractions Unit Test

| Instructions This part consists of 12 multiple-choice questions Each question is worth 1 mark Fill in only ONE CIRCLE for each question Calculators are NOT allowed | | | | | | | | |
|--|--|---|------------------|----------------|------------------|----------------|------------------|-------|
| Tim | ne allowed: [,] | | | ii da | | Total mark | (s = 12 | |
| 1 | $7 + \frac{7}{10}$ equal | 0 | | | | | | Marks |
| • | $(\mathbf{A}) 7\frac{3}{10}$ | B | $7\frac{7}{10}$ | C | $7\frac{1}{10}$ | D | $\frac{107}{10}$ | |
| 2 | $1 - \frac{80}{1000}$ equa (A) $\frac{1080}{1000}$ | ls B | 900 | C | $\frac{23}{25}$ | D | $\frac{24}{25}$ | 1 |
| 3 | $\frac{1}{5} \text{ of } 35 + 16$ | equals | 1000 | | 25 | | 25 | |
| U | (\mathbf{A}) 21 | B | 27 | C | 23 | D | 28 | |
| 4 | $\frac{1}{2} + \frac{1}{3}$ equals | | | | | | | |
| 5 | $ \begin{array}{c} 2 \\ \hline \mathbf{A} \\ \frac{1}{5} \\ \hline \text{The value of} \\ \hline \mathbf{A} \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1$ | \mathbf{B} | $\frac{5}{6}$ | C | $\frac{1}{6}$ | D | $\frac{2}{3}$ | |
| Ð | $(A) 2\frac{1}{12}$ | $\overline{2}^{+}\overline{4}^{+}\overline{6}^{-}$ IS (B) | $3\frac{5}{12}$ | C | $2\frac{7}{12}$ | D | $\frac{15}{24}$ | |
| 6 | $\frac{3}{4} + \frac{4}{3}$ equals | | 12 | | 12 | | 24 | |
| | $(A) \frac{25}{12}$ | B | 1 | C | $\frac{12}{7}$ | D | $\frac{7}{12}$ | |
| 7 | ~ | a number is eq | ual to 8; t | he number is | | | | |
| | (A) 16 | B | 24 | (\mathbf{C}) | 12 | (\mathbf{D}) | 40 | |
| 8 | $\frac{4\times8\times15\times10}{2\times6\times5} \ e$ | equals | | | | | | |
| | A 80 | B | 70 | C | 60 | D | 100 | |
| 9 | $\frac{5}{1-\frac{4}{5}} \text{ equals}$ $(\widehat{\mathbf{A}}) 15$ | | | | | | | |
| | (A) 15 | B | 25 | C | 5 | D | 20 | |
| 10 | Which of the | e following nur | nbers is tl | he largest? | | | | |
| | $(\mathbf{A}) \frac{2}{3}$ | B | $\frac{3}{5}$ | C | $\frac{2}{7}$ | D | $\frac{7}{10}$ | |
| 11 | $\frac{3}{7} \times \frac{21}{15}$ equals | | | | · | | | |
| | $(A) \frac{7}{105}$ | B | $\frac{12}{35}$ | C | $\frac{24}{105}$ | D | $\frac{3}{5}$ | |
| 12 | $4\frac{2}{5}+1\frac{1}{4}$ equa | ls | | | | | | |
| | $(\widehat{\mathbf{A}}) 3\frac{7}{20}$ | B | $5\frac{13}{20}$ | C | $6\frac{9}{20}$ | D | $7\frac{11}{20}$ | |

Total marks achieved for PART A

12

Fractions Unit Test Instructions This part consists of 15 gues

ructionsThis part consists of 15 questionsEach question is worth 1 markWrite answers in the answers-only column

Time allowed: 20 minutes

Total marks = 15

| | Questions | Answers only | Marks |
|----------|--|--------------|-------|
| 1 | $\frac{7}{8} = \frac{1}{56}$ | | 1 |
| 2 | Simplify $\frac{9}{12}$ | | 1 |
| 3 | Simplify $7\frac{8}{12}$, leaving as a mixed number. | | 1 |
| 4 | Write $4\frac{7}{9}$ as an improper fraction. | | 1 |
| 5 | Write $\frac{37}{4}$ as a mixed number. | | 1 |
| 6 | Add $\frac{3}{10} + \frac{4}{10}$ | | 1 |
| 7 | Subtract $\frac{39}{70} - \frac{9}{70}$ | | 1 |
| 8 | Work out $\frac{2}{3} + \frac{5}{7}$ | | 1 |
| 9 Ev/ | Find $\frac{8}{9} - \frac{1}{2}$ aluate the following: | | 1 |
| 10 | $\frac{3}{7} \times \frac{5}{7} =$ | | 1 |
| | $\frac{\frac{8}{21}}{\frac{7}{16}} = \frac{1}{5}$ | | 1 |
| | $\frac{5}{27} \frac{4}{9} = 2$ | | 1 |
| | $15 \frac{2}{5} = (8 3) 4$ | | 1 |
| 14 | $ \begin{pmatrix} \frac{8}{25} & \frac{3}{5} \end{pmatrix} \frac{4}{5} = $ $ 5\frac{5}{7} \times \frac{3}{20} = $ | | 1 |
| 13 | 7 20 | | |
| | | | |

Total marks achieved for PART B