

Number and Algebra

Fractions and Decimals

Maths Assessment Year Six: Fractions and Decimals

Mathematics/Year Six/Number and Algebra/Fractions and Decimals

1. Compare fractions with related denominators and locate and represent them on a number line (ACMNA125)
2. Solve problems involving addition and subtraction of fractions with the same or related denominators (ACMNA126)
3. Find a simple fraction of a quantity where the result is a whole number, with and without digital technologies (ACMNA127)
4. Add and subtract decimals and use estimation and rounding to check the reasonableness of answers (ACMNA128)
5. Multiply decimals by whole numbers and perform divisions by non-zero whole numbers where the results are terminating decimals (ACMNA129)
6. Multiply and divide decimals by powers of 10 (ACMNA130)
7. Make connections between equivalent fractions, decimals and percentages (ACMNA131)

Maths Assessment Year Six: Fractions and Decimals

1. Place these fractions on the number line as accurately as you can.

a) $\frac{1}{1}$ $\frac{1}{2}$ $\frac{1}{3}$ $\frac{1}{4}$ $\frac{1}{5}$ $\frac{1}{6}$



b) $\frac{5}{7}$ $\frac{3}{9}$ $\frac{1}{11}$ $\frac{5}{8}$ $\frac{9}{12}$ $\frac{2}{8}$



c) $\frac{1}{5}$ $\frac{3}{7}$ $\frac{2}{3}$ $\frac{1}{12}$ $\frac{8}{9}$ $\frac{1}{1}$



2. Solve these fraction equations and illustrate the addition or subtraction in the boxes below. One has been done for you.

$$\frac{1}{4} + \frac{2}{4} = \frac{3}{4}$$



a) $\frac{3}{8} + \frac{4}{8} =$



b) $\frac{4}{12} + \frac{2}{6} =$



c) $\frac{5}{7} + \frac{15}{21} =$



d) $\frac{7}{15} - \frac{3}{30} =$



e) $\frac{10}{3} - \frac{7}{9} =$



f) $\frac{6}{9} - \frac{5}{12} =$



9 marks

12 marks

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3. Find these fractions of a collection.

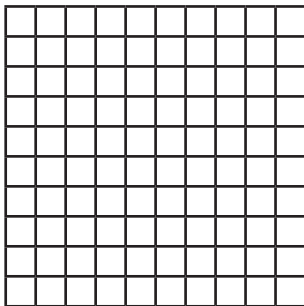
a) $\frac{1}{3}$ of 18

b) $\frac{5}{7}$ of 56

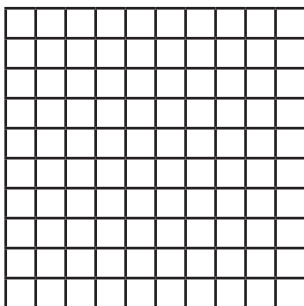
c) $\frac{8}{9}$ of 72

4. Represent these decimals by colouring their value on the 100 grid. Rewrite the decimals as fractions and percentages. Can you find an equivalent fraction?

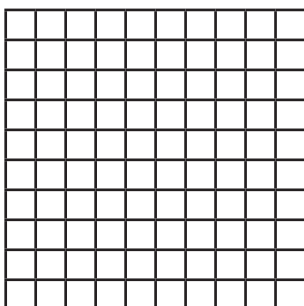
a) 0.55 /100 % Equivalent fraction:



b) 0.66 /100 % Equivalent fraction:



c) 0.84 /100 % Equivalent fraction:

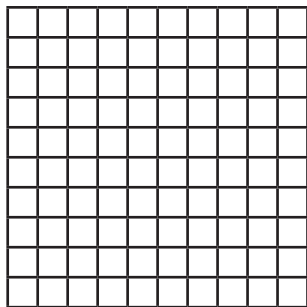


3 marks

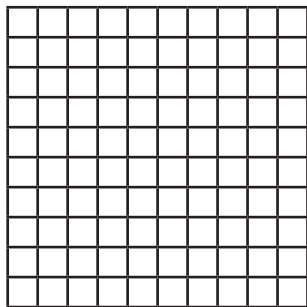
10 marks

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d) 0.06 /100 % Equivalent fraction:



e) 0.06 /100 % Equivalent fraction:



5. Before you solve these decimal equations, make a rough estimate to check if your solution is reasonable.

12 marks

- a) Estimate = $0.3 + 0.45$ Solution =
- b) Estimate = $0.61 + 0.38$ Solution =
- c) Estimate = $0.372 + 0.392$ Solution =
- d) Estimate = $0.41 - 0.32$ Solution =
- e) Estimate = $0.208 - 0.149$ Solution =
- f) Estimate = $0.239 - 0.187$ Solution =

6. Multiply and divide these decimals.

6 marks

- a) $0.289 \times 100 =$
- b) $12.387 \times 1000 =$
- c) $27.0042 \times 10\ 000 =$
- d) $2.43 \div 10 =$
- e) $4.382 \div 100 =$
- f) $1.00227 \div 1000 =$

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7. Multiply and divide these decimals.

a) $0.3 \times 7 =$

b) 0.28×6

c) $0.42 \times 5 =$

d) $0.9 \div 3 =$

e) $0.7 \div 5 =$

f) $0.62 \div 3 =$

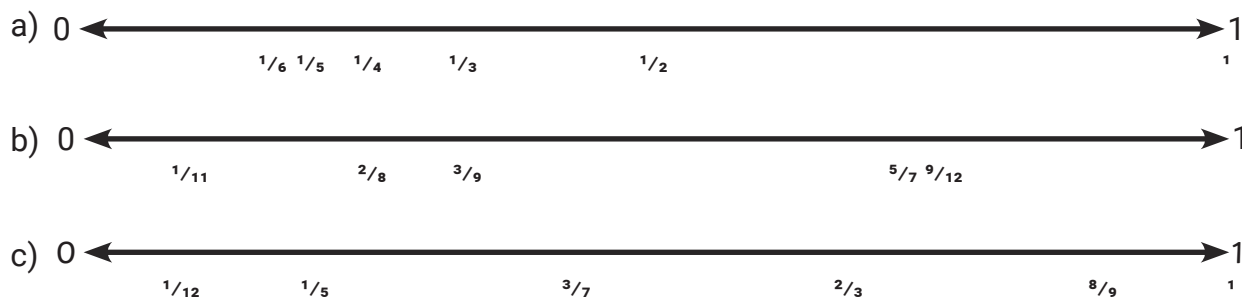
6 marks

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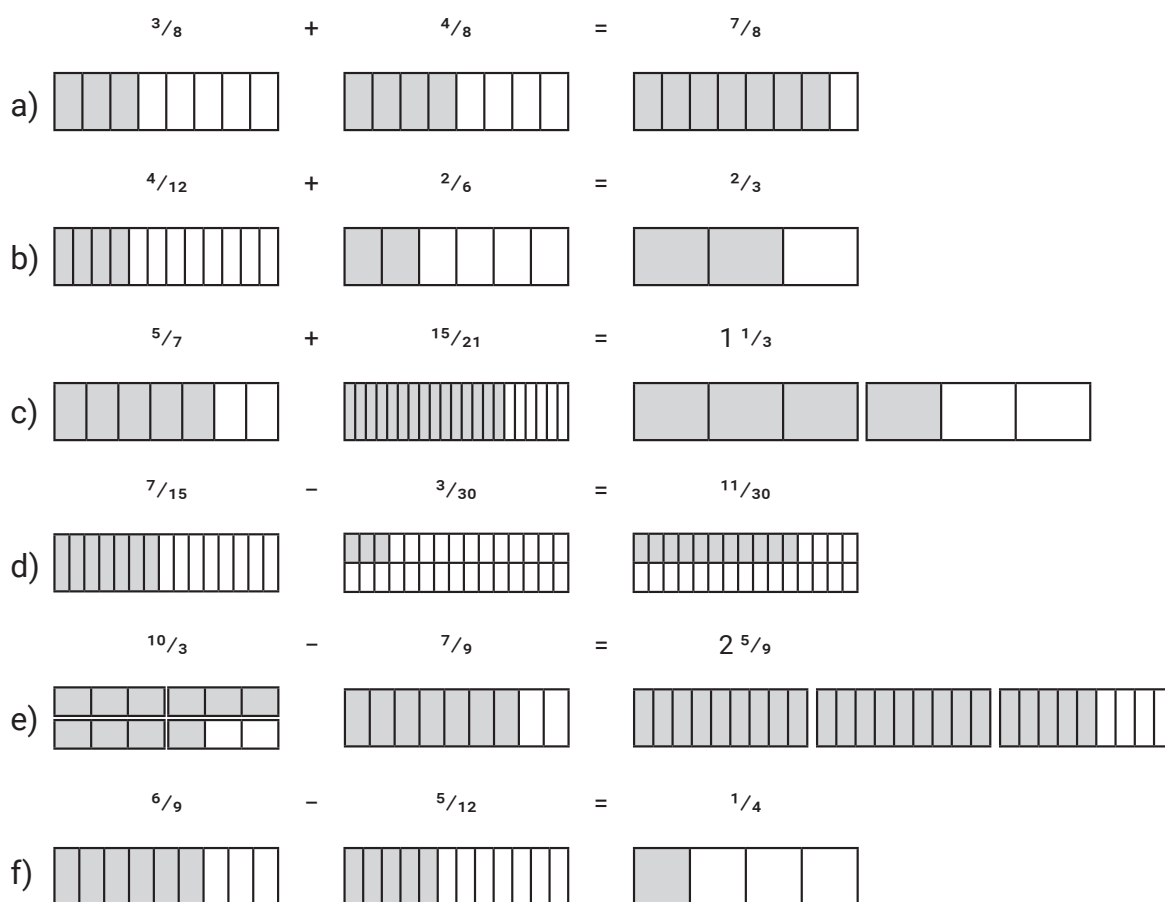
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1. Award half a mark for each fraction correctly placed on the number line.



2. Award one mark for a correct solution to the equation and one mark for illustrating each equation.

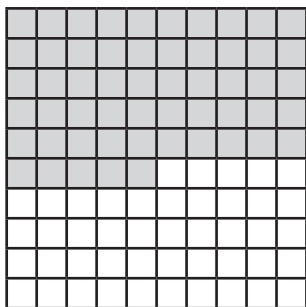


3. Award one mark for each correct solution.

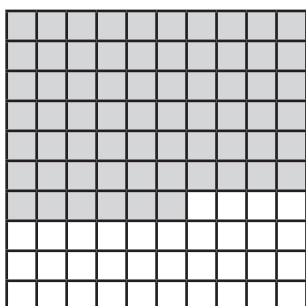
- a) **6**
- b) **40**
- c) **64**

4. Award one mark for converting each decimal to a fraction and a percentage and one mark for finding an equivalent fraction.

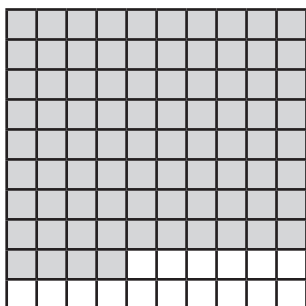
a) 0.55 $\frac{55}{100}$ **55%** Equivalent fraction: $\frac{11}{20}$



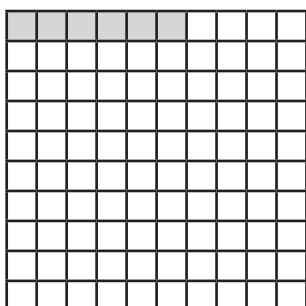
b) 0.66 $\frac{66}{100}$ **66%** Equivalent fraction: $\frac{2}{3}$



c) 0.84 $\frac{84}{100}$ **84%** Equivalent fraction: $\frac{21}{25}$



d) 0.55 $\frac{6}{100}$ **6%** Equivalent fraction: $\frac{3}{50}$

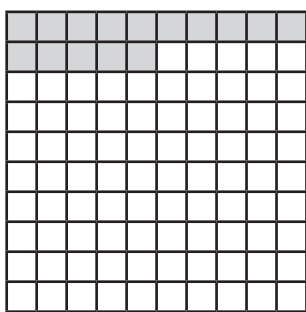


e) 0.55

$\frac{15}{100}$

15%

Equivalent fraction: $\frac{3}{20}$



5. Award one mark for a reasonable estimate (not exact) and one mark for a correct solution.

- | | | | | |
|--------------|-------------|-----------------|-----------|--------------|
| a) Estimate= | 0.7 | $0.3 + 0.45$ | Solution= | 0.75 |
| b) Estimate= | 1 | $0.61 + 0.38$ | Solution= | 0.99 |
| c) Estimate= | 0.8 | $0.372 + 0.392$ | Solution= | 0.764 |
| d) Estimate= | 0.1 | $0.41 - 0.32$ | Solution= | 0.09 |
| e) Estimate= | 0.05 | $0.208 - 0.149$ | Solution= | 0.059 |
| f) Estimate= | 0.05 | $0.239 - 0.187$ | Solution= | 0.052 |

6. Award one mark for each correct solution.

- | | |
|-------------------------------|-------------------|
| a) $0.289 \times 100 =$ | 28.9 |
| b) $12.387 \times 1000 =$ | 12 387 |
| c) $27.0042 \times 10\ 000 =$ | 2 700 420 |
| d) $2.43 \div 10 =$ | 0.243 |
| e) $4.382 \div 100 =$ | 0.04382 |
| f) $1.00227 \div 1000 =$ | 0.00100227 |

7. Award one mark for each correct solution.

- | | |
|----------------------|--------------|
| a) $0.3 \times 7 =$ | 2.1 |
| b) 0.28×6 | 1.68 |
| c) $0.42 \times 5 =$ | 2.1 |
| d) $0.9 \div 3 =$ | 0.3 |
| e) $0.7 \div 5 =$ | 0.14 |
| f) $0.62 \div 3 =$ | 0.206 |

Total marks: 55