

SMART EXAM RESOURCES
0580 IGCSE MATH EXTENDED
TOPIC: NUMBERS
SUB-TOPIC: SUMS INVOLVING MIXED NUMBERS AND FRACTIONS
SET-2-QP-MS

01 Without using your calculator, work out $1\frac{3}{4} \times \frac{6}{35}$.

You must show all your working and give your answer as a fraction in its simplest form.

..... [3]

MARK SCHEME:

| | | |
|--------------------|-----------|---|
| $\frac{7}{4}$ | M1 | or $\frac{k}{4} \times \frac{6}{35}$ where $k > 4$ |
| $\frac{3}{10}$ cao | A2 | A1 for $\frac{42}{140}$ or $\frac{21}{70}$ or $\frac{6}{20}$ |

02 Without using a calculator, work out $\frac{2}{3} \div 1\frac{1}{5}$.

You must show all your working and give your answer as a fraction in its simplest form.

..... [3]

MARK SCHEME:

| | | |
|--|-----------|--|
| $\frac{6}{5}$ | B1 | accept equivalent fractions e.g. $\frac{18}{15}$ |
| $\frac{2}{3} \times \text{their } \frac{5}{6}$ | M1 | or $\frac{10}{15} \div \frac{18}{15}$ oe |
| $\frac{5}{9}$ cao | A1 | |

03 Without using a calculator, work out $2\frac{1}{4} \div \frac{3}{7}$.

You must show all your working and give your answer as a mixed number in its simplest form.

..... [3]

MARK SCHEME:

| | | |
|---|-----------|---|
| $\frac{9}{4} \times \frac{7}{3}$ or $\frac{63}{28} \div \frac{12}{28}$ oe with common denominator | M2 | B1 for $\frac{9}{4}$ oe seen or M1 for <i>their</i> $\frac{9}{4} \times \frac{7}{3}$ |
| $5\frac{1}{4}$ cao | A1 | |

04 Work out the value of $1 + \frac{2}{3 + \frac{4}{5+6}}$.

Answer [2]

MARK SCHEME:

| | | |
|---|---|---|
| 1.59(459...) or $59/37$ or $1\frac{22}{37}$ | 2 | M1 $\frac{22}{37}$ or 0.5945... seen |
|---|---|---|

05 Use a calculator to work out the **exact** value of

$$1 + \frac{1}{5} + \left(\frac{1}{5}\right)^2 + \left(\frac{1}{5}\right)^3 + \left(\frac{1}{5}\right)^4.$$

Answer [2]

MARK SCHEME:

| | | |
|------------|---|---|
| 1.2496 cao | 2 | Allow $1\frac{156}{625}$ M1 $1 + 0.2 + 0.04 + 0.008 + 0.0016$ |
|------------|---|---|

06 Work out $\frac{240^2}{5 \times 10^6}$.

Give your answer in standard form.

Answer [2]

MARK SCHEME:

| | | |
|--------------------------|---|-----------------------|
| $1.15(2) \times 10^{-2}$ | 2 | M1 figs 115(2) |
|--------------------------|---|-----------------------|

07 Do not use a calculator in this question and show all the steps of your working.

Give each answer as a fraction in its lowest terms.

Work out.

(b) $2\frac{1}{2} \times \frac{4}{25}$

Answer(b) [2]

MARK SCHEME:

| | | |
|--|-----------|--|
| <p>(a) $\frac{9}{12} - \frac{1}{12}$ oe $[=] \frac{8}{12}$ oe $[=] \frac{2}{3}$</p> | M1 | Must be shown |
| | M1 | Both fractions must be shown |
| <p>(b) $\frac{5}{2} \times \frac{4}{25}$ oe Cancelling shown or $\frac{20}{50}$ oe $[=] \frac{2}{5}$</p> | M1 | Must be shown |
| | M1 | Dependent and cancelling shown or a fraction and then $\frac{2}{5}$ must be shown |

08 Without using a calculator, work out $1\frac{1}{6} \div \frac{7}{8}$.

Show all your working and give your answer as a fraction in its lowest terms.

Answer [3]

MARK SCHEME:

| | | |
|---|---|--|
| $\frac{7}{6}$ oe <i>their</i> $\frac{7}{6} \times \frac{8}{7}$ oe $\frac{4}{3}$ or $1\frac{1}{3}$ cao must see working | B1 M1 A1 | Or M1 for $\frac{56}{\cancel{48}} \div \frac{42}{\cancel{48}}$ or equivalent division with fractions with common denominator |
|---|---|--|

10 Without using a calculator, work out $1\frac{2}{3} - \frac{11}{15}$.

Write down all the steps of your working and give your answer as a fraction in its lowest terms.

..... [3]

MARK SCHEME:

| | | | | |
|--|--|---------------------------------------|-----------|---|
| | $\frac{5}{3}$ | $\frac{2}{3} + \frac{4}{15}$ | B1 | Allow $\frac{5k}{3k}$ |
| | $\frac{25}{15}$ [and $\frac{11}{15}$] | $\frac{10}{15}$ [and $\frac{4}{15}$] | M1 | Correct method to find common denominator e.g. $\frac{75}{45}$ and $\frac{33}{45}$ Follow through <i>their</i> $\frac{5}{3}$ for the M1 mark |
| | $\frac{14}{15}$ cao | $\frac{14}{15}$ cao | A1 | |