

Mark schemes

1. 11 quarters

[1]

2. Fractions completed as shown below:

$$\begin{array}{ccc} \boxed{6} & & \boxed{9} \\ \hline 10 & & 15 \\ & \frac{12}{\boxed{20}} & \end{array}$$

All three fractions must be correct for the award of the mark.

[1]

3. Fraction circled as shown:

$$\frac{7}{8} \quad \frac{2}{5} \quad \frac{1}{3} \quad \left(\frac{5}{8} \right) \quad \frac{3}{6}$$

Accept alternative unambiguous indications, eg fraction ticked, crossed or underlined.

[1]

4. Two fractions circled as shown:

$$\left(\frac{2}{3} \right) \quad \frac{6}{10} \quad \frac{9}{12} \quad \left(\frac{10}{15} \right) \quad \frac{6}{20}$$

Do not award the mark if additional incorrect fractions are circled.
Accept alternative unambiguous indications, eg fractions ticked, crossed or underlined.

[1]

5. $\frac{4}{9}$

[1]

6. (a) $6\frac{1}{4}$

Accept equivalent fractions.

Do not accept $5\frac{5}{4}$

1

(b) $1\frac{1}{2}$

Accept equivalent fractions, eg

$1\frac{2}{4}$, $\frac{3}{2}$, 1.5, 150%

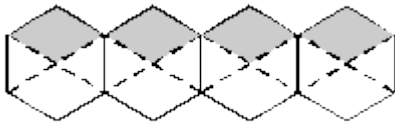
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[2]

7. $\frac{1}{6}$

[1]

8. Equivalent of one third of each hexagon shaded, or a total of $1\frac{1}{3}$ hexagons shaded, eg



Accept part shapes shaded as long as the intention is clear.
Accept inaccuracies in shading provided the intention is clear.

[1]

9. 5

[1]

10. 126

[1]

11. (a) $\frac{1}{3}$

Accept equivalent fractions or decimals.

1

(b) $\frac{1}{9}$

Accept equivalent fractions or decimals.

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[2]

12. 4375

[1]

13. 157.5 OR $157\frac{1}{2}$

[1]

14.

$\frac{3}{5}$

$\frac{3}{4}$

$\frac{17}{20}$

$\frac{9}{10}$

Fractions must be written in the correct order for the award of the mark.

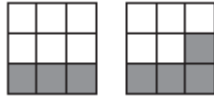
Accept equivalent fractions or decimals.

[1]**15.**

(a) Indicates **Yes** and gives a correct explanation, eg:

- $\frac{1}{3} = \frac{3}{9}, \frac{3}{9} < \frac{4}{9}$

-



- $\frac{1}{3}$ of 9 is 3 not 4

- $\frac{4}{9}$ should be $\frac{1.333...}{3}$, not $\frac{1}{3}$

- $0.33... < 0.44...$

- $\frac{1}{3} = \frac{4}{12}, \frac{4}{12} < \frac{4}{9}$

- $\frac{1}{3}$ of 27 = 9 and $\frac{4}{9}$ of 27 = 12

Accept minimally acceptable explanation, eg:

- $\frac{3}{9}$

- $\frac{9}{27}, \frac{12}{27}$

- 4 is over a third of 9

- $\frac{1}{3}$ of 9 is 3

- $\frac{4}{9}$ is closer to a half than a third

- 0.33, 0.44

- It is one ninth bigger

- If you divide $\frac{4}{9}$ by a $\frac{1}{3}$ you get $\frac{4}{3}$

- $\frac{4}{12}$

! Inaccuracies in diagrams

Throughout the question, condone provided the pupil's intention to divide into thirds, ninths and/or eighteenths is clearly shown, and the correct sections are shaded

*! Indicates **No**, or no decision made, but explanation clearly correct*

Condone provided the explanation is more than minimal

Do not accept incomplete or incorrect explanation, eg:

- *If you draw a pie chart for $\frac{4}{9}$, more than $\frac{1}{3}$ is shaded*
- *Put them into 27ths and $\frac{4}{27} > \frac{1}{27}$*
- *$\frac{1}{3} \times 3 = \frac{3}{9}$*

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(b) Indicates **No** and gives a correct explanation, eg:

- The fractions are equal; if you multiply the numerator and denominator by the same number the fractions are equivalent
- $\frac{4}{9} = \frac{8}{18}$
- $\frac{4}{9} \times 2 = \frac{8}{9}$ not $\frac{8}{18}$
- $\frac{8}{18} \div 2 = \frac{4}{18}$ which is $\frac{2}{9}$ not $\frac{4}{9}$
- To double the fraction, you don't double the numerator and the denominator, you just double the numerator
- To halve the fraction, you don't halve the denominator, only the numerator

Accept minimally acceptable explanation, eg:

- *Equal*
- *Equivalent*
- *Same*
- *$\frac{4}{9}$ is half of $\frac{8}{9}$*
- *$\frac{4}{18}$ is half of $\frac{8}{18}$*
- *You only double the top number*
- *You only halve the top number*

*! Indicates **Yes**, or no decision made, but explanation clearly correct*

Condone provided the explanation is more than minimal

Do not accept Incomplete explanation, eg

- If you double the top and the bottom number of $\frac{4}{9}$,
you get $\frac{8}{18}$

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[2]

16.

(a) Gives a pair of numbers to make the calculation correct, eg:

- $\frac{1}{\boxed{2}} + \frac{\boxed{1}}{5}$

- $\frac{1}{\boxed{10}} + \frac{\boxed{3}}{5}$

Accept the following

- $\frac{1}{\boxed{-10}} + \frac{\boxed{4}}{5}$

- $\frac{1}{\boxed{-2}} + \frac{\boxed{6}}{5}$

Do not accept use of non-integers, eg:

- $\frac{1}{\boxed{3.33\dots}} + \frac{\boxed{2}}{5}$

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(b) Gives a **different** pair of numbers to make the calculation correct

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[2]