

## Mark schemes

Q1.

Divides 8 by 11, showing at least 0.7

M1

0.72

*Strand (i) Correct notation  
Accept 0.7272...*

Q1

[2]

Q2.

(a) 560.88

B1

(b) 45 600

B1

(c) 56 088 – 456

M1

55 632

A1

Alternative method

Traditional method of long multiplication with correct use of 0s (allow one arithmetic error) and attempt to add

or

Grid method with correct use of 0s (allow one arithmetic error) and attempt to add

or

Gelosia method (allow one arithmetic error) and attempt to add

$$\begin{array}{r} 122 \\ \times 456 \\ \hline 732 \\ 6100 \\ 48800 \\ \hline 55632 \end{array}$$

or

$$\begin{array}{r} 456 \\ \times 122 \\ \hline 912 \\ 9120 \\ 45600 \\ \hline 55632 \end{array}$$

or

	100	20	2
400	40000	8000	800
50	5000	1000	100
6	600	120	12

↓

$$\begin{array}{r} 40000 \\ 8000 \\ 5000 \\ 1000 \\ 800 \\ 600 \\ 100 \\ 120 \\ + 12 \\ \hline 55632 \end{array}$$

or

	1	2	2	
	0	0	0	4
	4	8	8	
5	0	1	1	5
	5	0	0	
5	0	1	1	6
	6	2	2	
	6	3	2	

55 632

M1

A1

[4]

Q3.

(a) 93.42

*any clear indication*

B1

(b) 34.6

*any clear indication*

B1

[2]

Q4.

(a)  $0.\dot{7} \div 10 = 0.0\dot{7}$  and  $\frac{7}{9} \div 10 =$   
 $\frac{7}{90}$

or

$$0.0\dot{7} \times 10 = 0.\dot{7} \text{ and } \frac{7}{90} \times 10 = \frac{7}{9}$$

or

$$0.\dot{7} \div 10 = 0.0\dot{7} \text{ and } \frac{7}{90} \times 10 = \frac{7}{9}$$

or

because the decimal is divided by 10 the 9 has to be multiplied by 10

*oe*

B1

Additional Guidance

Algebraic methods

B0

Division of 7 by 90

B0

(b) Alternative method 1

$$0.2 + 0.0\dot{7} \text{ or } \frac{2}{10} + \frac{7}{90}$$

M1

$$\frac{18}{90} + \frac{7}{90} \text{ or } \frac{25}{90}$$

M1dep

$$\frac{5}{18}$$

A1

Alternative method 2

$$10x = 2.777... \text{ or } 100x = 27.777...$$

*Any letter*

M1

$$10x - x = 2.777... - 0.277...$$

$$\text{or } 9x = 2.5 \text{ or } \frac{2.5}{9}$$

$$\text{or } 100x - x = 27.777... - 0.277...$$

$$\text{or } 99x = 27.5 \text{ or } \frac{27.5}{99}$$

$$\text{or } 100x - 10x = 27.777... - 2.777...$$

$$\text{or } 90x = 25 \text{ or } \frac{25}{90}$$

oe

M1dep

$$\frac{5}{18}$$

A1

[4]

Q5.

Alternative method 1

$$(n = 0.17272... \text{ and})$$

$$100n = 17.272...$$

oe

$$\text{eg } 10n = 1.7272... \text{ and}$$

$$1000n = 172.72...$$

M1

$$(99n = 17.272... - 0.17272... \text{ or}$$

$$99n = 17.1 \text{ or } \frac{17.1}{990} \text{ or } \frac{171}{990}$$

$$\text{or } \frac{57}{330}$$

oe

$$\text{eg } 990n = 172.72... - 1.7272... \text{ or}$$

$$990n = 171$$

M1dep

$$\frac{19}{110}$$

A1

Alternative method 2

$$0.07272... = \frac{72}{990}$$

M1

$$\left( \frac{1}{10} + \frac{72}{990} \right) \frac{99}{990} + \frac{72}{990} \text{ or}$$

$$\frac{171}{990} \text{ or } \frac{57}{330}$$

M1dep

$$\frac{19}{110}$$

A1

[3]

Q6.  
3

B1

[1]

Q7.

(a)  $-0.3$   $\frac{1}{3}$   $3.03$   $33.3$

*B1 for  $\frac{1}{3} = 0.3(\dots)$*

*or*

*B1 for  $-0.3$  first and  $33.3$  last*

*or*

*B1 for reverse order*

B2

(b) No ticked and partial explanation eg

No, one is positive, one negative

No,  $33.3 + 0.3$

*oe*

*Implied if Q1 awarded*

B1

No ticked and full explanation eg

No, it is  $33.6$

No,  $33.3 + - 0.3 = 33$

*Strand (iii)*

*oe*

Q1

[4]

Q8.

(a)  $0.\dot{5}3846\dot{1}$

or  $0.\overline{538461}$

B1

Additional Guidance  
Mark final answer

(b)  $\frac{37}{90}$

B1

[2]

Q9.

$$4\frac{1}{2} \times 3\frac{3}{4} \text{ or } \frac{9}{2} \text{ or } \frac{15}{4}$$

M1

$$\frac{9}{2} \times \frac{15}{4} \text{ or } \frac{135}{8}$$

M1dep

$$16\frac{7}{8}$$

*oe mixed number*

A1

Alternative method

$$4.5 \times 3.75 \text{ or } 15 \text{ or } 1.875$$

M1

Full method to evaluate  $4.5 \times 3.75$

*allow one error*

M1dep

$$16.875$$

*condone rounding or truncation after correct answer seen*

A1

[3]

Q10.

$$3 \div 2\frac{1}{4}$$

$$2.25x = 3$$

M1

$$3 \div \frac{9}{4}$$

$$4.5x = 6 \text{ or multiple}$$

*eg  $9x = 12$*

M1

$$3 \times \frac{4}{9}$$

$$(x =) 12 \div 9$$

M1

$$\frac{12}{9}$$

$$\text{oe } \frac{4}{3} \quad 1\frac{1}{3} \quad 1.33\dots$$

A1

[4]

Q11.

$$\frac{1}{3} \text{ and } \frac{5}{7}$$

*B1 for 2 correct and 1 incorrect  
or for 1 correct and 1 incorrect  
or for 1 correct*

B2

[2]

Q12.

$$1\frac{3}{5} \div \frac{1}{5}$$

or 5 (+) 3

$$\text{or } \frac{8}{5}$$

*oe  
eg 1.6  $\div$  0.2*

$$\frac{1600}{200}$$

$$\frac{1}{5}, \frac{1}{5}, \frac{1}{5}, \frac{1}{5}, \frac{1}{5}, \frac{1}{5}, \frac{1}{5}, \frac{1}{5}, \frac{1}{5}$$

$$\frac{5}{5} (+) \frac{3}{5}$$

M1

8

*oe*

A1

[2]