

M1.

Alternative method 1

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

$100n = 17.272\dots$

oe

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

$1000n = 172.72\dots$

M1

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

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

or $\frac{57}{330}$

oe

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

$990n = 171$

M1dep

$\frac{19}{110}$

A1

Alternative method 2

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

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]

M2.

(a) **Alternative method 1**

Method to show 4 divided by 9 with answer 0.44(...)

or method to show 1 divided by 9 = 0.11(...) and $4 \times 0.11(\dots)$

Strand (ii) full calculation or explanation seen

Q1

Alternative method 2

$$(x = 0.44\dots \quad \text{or} \quad x = 0.\dot{4})$$

$$10x = 0.44\dots \quad \text{or} \quad 10x = 0.\dot{4}$$

$$9x = 4$$

$$x = \frac{4}{9}$$

Strand (ii) full calculation or explanation seen

Q1

Alternative method 3

$$0.44\dots \times 10 = 4.4\dots$$

$$0.44\dots \times 9 = 4.4\dots - 0.44\dots$$

$$0.44... \times 9 = 4$$

$$0.44... = \frac{4}{9}$$

Strand (ii) full calculation or explanation seen

Q1

Additional Guidance

Minimum of two 4 digits seen

$$10x = 4.4$$

$$9x = 4$$

$$x = \frac{4}{9}$$

Q1

$$x = 0.4$$

$$10x = 4.4$$

$$9x = 4$$

$$x = \frac{4}{9}$$

Q0

(b) **Alternative method 1**

$$\frac{9}{10} + \frac{4}{90} \quad \text{or} \quad \frac{81}{90} + \frac{4}{90}$$

$$\text{or } 0.5 + 0.\dot{4} \quad \text{or} \quad \frac{1}{2} + \frac{4}{9} \quad \text{or} \quad \frac{9}{18} + \frac{8}{18}$$

oe

M1

$$\frac{85}{90} \quad \text{or} \quad \frac{17}{18}$$

oe

A1

Alternative method 2

$$10x = 9.\dot{4} \quad \text{and} \quad 100x = 94.\dot{4}$$

$$\text{or } 100x - 10x = 94.\dot{4} - 9.\dot{4}$$

$$\text{or } 100x - 10x = 85$$

$$\text{or } 90x = 85$$

$$100x - x = 93.5$$

$$\text{or } 99x = 93.5$$

$$\text{or } (x =) \frac{93.5}{99}$$

M1

$$\frac{85}{90} \text{ or } \frac{17}{18} \text{ or } \frac{187}{198} \text{ or } \frac{935}{990}$$

oe

A1

Additional Guidance

$10x = 9.44$ and $100x = 94.4$ is minimum requirement to score M1

May be recovered by a fully correct answer to score M1A1

Ignore further working from correct fraction

[3]

M3.

(a) $0.5\dot{3}846\dot{1}$

or $0.\overline{538461}$

B1

Additional Guidance

Mark final answer

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

B1

[2]

M4.(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]