Mark schemes

Q1.

Fraction	Percentage
	30%
$\frac{43}{100}$	
	250(%)

B1 for each correct answer

B3

Additional Guidance

Do not accept fractions with non-integer numerator or denominator

eg $\frac{4.3}{10}$ (unless it is an attempt to cancel after correct answer seen)

B0

Ignore attempts to cancel $\frac{43}{100}$ once correct fraction seen

[3]

Q2.

(a) 120 ÷ (1 + 4) or 120 ÷ 5 or 24 or 96

oe

M1

24 : 96

in order

A1

Additional Guidance

96 : 24

M1A0

120 ÷ 5 and 120 ÷ 4 is choice unless intention is clear

M0A0

Further cancelling after 24 : 96 seen e.g. 1 : 4

M1A0

(b) 1.75 : 1 or $1\frac{3}{4}$: 1 or $\frac{7}{4}$: 1

B1

[3]

Q3.

(a) 25(%) : 75(%)

or $\frac{1}{4} : \frac{3}{4}$

oe

M1

1 : 3

SC1 3 : 1

A1

(b) 19.5 ÷ 3

or 26 ÷ 4

or 6.5

oe

19.5 ÷ 75 × 25

M1

6.50

Correct money notation

A1

Additional Guidance

Condone 6.50p on answer line provided £ sign is not crossed out

M1A1

[4]

Q4.

(a) $\frac{30}{100}$ or $\frac{3}{10}$

oe any equivalent fraction eg $\frac{15}{50}$, $\frac{6}{20}$

B1

Additional Guidance

Accept equivalent fractions such as $\frac{15}{50}$, $\frac{6}{20}$ etc

Do not accept decimal answer such as 0.3, 0.30 etc.

Note: $\frac{1}{3}$ in working with $\frac{3}{10}$ on answer line is B1

(b) 0.8 or 0.80

oe decimal

B1

Additional Guidance

Accept 0.8, 0.80, 0.800, 0.8000 etc

Do not accept fraction answer such as $\frac{80}{100}$, $\frac{8}{10}$ etc.

(c) $0.\dot{6}$ and $\frac{66}{99}$

B1 one correct
or one correct and one incorrect
or two correct and one incorrect
any clear indication

B2

[4]

Q5.

14 000 × 0.2
or

14 000 ÷ 10 × 2
or
(10% =) 1400
or
(1% =) 140

oe
eg 14 000 ÷ 5
$\frac{20}{100}$ *× 14 000*

M1

2800

oe eg 2800.00

A1

Additional Guidance

2800 followed by 14 000 − 2800 (implied by 11 200)

M1A0

14 000 ÷ 10 = 4000 followed by 4000 × 2 = 6000 (fully correct method)

M1A0

14 000 ÷ 10 = 4000 followed by 20% = 8000 (method not shown for 20% but it is correct for 2 × their 10%)

M1A0

14 000 ÷ 10 = 4000 followed by 20% = 6000 (method not shown for 20%)

M0A0

10% = 140, 140 × 2 = 280 (method not shown for 10%)

M0A0

14 ÷ 5 or 2.8 (without place value adjustment)

M0A0

[2]

Q6.

$\frac{30}{100} \times 4$ or 1.2(0) or 120

or $\frac{70}{100}$

oe

M1

4 − their 1.2(0) or 2.8

or $\frac{70}{100} \times 4$

oe

M1dep

(£) 2.80

Strand (i) Must have correct units
do not accept 2.80p or 280p or 2.8

Q1

[3]

Q7.

$10x = 21 + 3$ or $10x = 24$

or

$(21 + 3) \div 10$ or $24 \div 10$

oe eg $-10x = -3 - 21$

M1

2.4

oe eg $\frac{24}{10}$ or $\frac{12}{5}$ or $2\frac{4}{10}$ or $2\frac{2}{5}$
SC1 1.8 oe

A1

Additional Guidance

$10x - 3 + 3 = 21 + 3$

M1

$10x - 3 = 21 + 3$ or $10x - 3 + 3 = 21$ unless recovered

M0

$10x \div 10 - 3 \div 10 = 21 \div 10$

M1

$10x \div 10 - 3 = 21 \div 10$ unless recovered

M0

Embedded answer eg $10 \times 2.4 - 3 = 21$ with no or incorrect answer

M1A0

[2]

Q8.

(a) 9

B1

Additional Guidance
Answer of 9 on answer line or clearly stated in script is the only acceptable answer
Do not allow embedded answers such as 6 × 9 =

(b) $3y = 9 - 15$ or $3y = -6$

or

$y = \frac{9}{3} - \frac{15}{3}$ or $y = 3 - 5$

or

$(9 - 15) \div 3$

oe

M1

–2

A1

Additional Guidance
Embedded answer. M1 A0
T&I is M0 unless answer stated as –2 then it is full marks.

(c) $4w - 2w\ (= 2w)$ or $7 - 2\ (= 5)$

oe

M1

$2w = 5$

oe

A1

2.5 or $2\frac{1}{2}$ or $\frac{5}{2}$

ft if M awarded and at most one error

A1ft

Additional Guidance
Allow ft if equation written as $2w = a$ but **not** $a = 7$ or $a = 2$
or $bw = 5$ but **not** $b = 4$

$2w = 9$, $w = 4.5$	M1 A0 A1ft
$6w = 5$, $w = \frac{5}{6}$ or 0.83…	M1 A0 A1ft
$6w = 9$	M0
$2w = 7$, $w = 3.5$	M1 A0 A0ft

$2w = 2$, $w = 1$	M1 A0 A0ft
$4w = 5$, $w = 1.25$	M1 A0 A0ft
Embedded answer	M1 A1 A0

T&I is M0 unless answer stated as 2.5 then it is full marks

[6]

Q9.

$x^2 + 3x$

B1

[1]

Q10.

(a) 28 : 12 or 14 : 6

or

56 ÷ 8 and 24 ÷ 8

(may be done in stages)

or

3 and 7 seen

M1

7 : 3

A1

(b) 1.25 : 1

oe e.g. $\frac{5}{4}:1$

B1

(c) 180 ÷ (1 + 9) or 18 or 162

M1

18 and 162

A1

Additional Guidance

162 and 18

M1A0

Build-up method will score 2 or 0

e.g. 1 : 9

2 : 18 does not score M1 for 18

[5]

Q11.

A and C

B1

[1]

Q12.

A and D

B1

[1]

Q13.

2 2

B3 for 4 or 5 correct

0 or none 2

B2 for 2 or 3 correct

1 1

B1 for 1 correct

B4

[4]

Q14.

Any two of (–1, –4), (0, –1), (1, 2), (2, 5) and (3, 8) or other correct points

may be seen in a table

may be implied by points plotted

M1

At least two correct points plotted correctly

or

at least two of their points plotted correctly

implied by correct line which does not have to extend from (–1, –4) to (3, 8)

$\pm \frac{1}{2}$ *small square*

M1

Straight, ruled line from (–1, –4) to (3, 8)

$\pm \frac{1}{2}$ *small square*

ignore line beyond (–1, –4) and (3, 8)

A1

Additional Guidance

Ignore extra points listed or plotted

M marks can be scored even if wrong line drawn

M marks are independent, the second mark can be awarded for correct

plotting of two of their points

[3]

Q15.

(5, 7)

B1

[1]