

M1.

(a) $5w = 24 + 11$
or $5w = 35$

oe
 $35 \div 5$

M1

7

A1

(b) $15x + 12y$ or $12y + 15x$

B1

(c) $2x + y^2$ or $y^2 + 2x$

B1**[4]****M2.**

$7x - 4$ or $3x + 2$

M1

$7x - 4 = 3(3x + 2)$
or $7x - 4 = 9x + 6$

M1

$7x - 9x = 6 + 4$
or $-2x = 10$
or $-4 - 6 = 9x - 7x$
or $-10 = 2x$

oe
Collecting like terms

M1

-5

A1

[4]

M3.

$$4x + 20 = 15$$

or

$$x + 5 = 15 \div 4$$

oe

M1

$$4x + 15 - \text{their } 20$$

or

$$x = 15 \div 4 - 5$$

oe

M1

-1.25

oe

ft M1M0 or M0M1 with only one error

A1ft

[3]

M4. $(8x =) 30 + 10$ or $(8x =) 40$

M1

5

SC1 2.5 or $\frac{20}{8}$ oe

A1

Alternative method

$$x - \frac{10}{8} = \frac{30}{8}$$

$$\text{or } x = \frac{30}{8} + \frac{10}{8}$$

or their $(30 + 10) \div 8$

M1

5

$$\text{SC1 2.5 or } \frac{20}{8} \text{ oe}$$

A1

[2]

M5. $\sqrt{64}$ or 8 seen

B1

$$5x - 2 = \text{their } 8$$

$$\text{or } 9 - y = \text{their } 8$$

M1

$$x = 2$$

A1ft

$$y = 1$$

SC2 for $x = 13.2$ and $y = -55$

SC1 for $x = 13.2$ or $y = -55$

A1ft

Alternative Method

$$(5x - 2)(9 - y) = 64$$

B1

$$5x - 2 = 9 - y$$

$$\text{or } y = 9 - (5x - 2)$$

oe

M1

$$(5x - 2)(9 - (5x - 2)) = 64$$

$$\text{or } (5x - 2)^2 = 64$$

$$\text{or } 25x^2 - 20x - 60 = 0$$

$$\text{or } x = 2$$

oe

M1

$$x = 2 \text{ and } y = 1$$

A1

[4]**M6.(a)** 25*Embedded ie $25 - 7 = 18$ B0*

B1

(b) An equation whose solution is 8

Equation does not have to be linear

eg $x^2 = 64$

Accept $x = 8$

B1

(c) Two values where $b - a = 10$ *Accept 0, negative numbers and non-integers**B1 for any two values where $a + b = 10$* *or for any two values where $a - b = 10$* *B1 $10 + a = b$ oe seen*

B2

[4]

M7.(a) $4a + 2b$

B1 for each term

Do not ignore further incorrect working for B2

B2

(b) $4x = 11 + 7$
 $\frac{11+7}{4}$

M1

4.5

oe

A1

[4]

M8.

(a) $9a$

B1

(b) 5

B1

(c) 6

B1

(d) 20

B1

[4]

M9.

Alternative method 1

(a =) $12 \div 3$ or 4

M1

$$2b + \text{their } a = 24$$

$$\text{or } 2b + 4 = 24$$

$$\text{or } b = 10$$

M1

$$2 \times \text{their } a + \text{their } b + 2c = 30$$

$$\text{or } 8 + 10 + 2c = 30$$

$$\text{or } 2c = 12$$

$$\text{or } c = 6$$

$$\text{or } \text{sum of middle column is}$$

$$30 - \text{their } a$$

M1

22, 26 and 18

*SC2 first and third column totals correct**SC1 totals of $3a + b$, $a + b + 2c$, $2a + b$*

A1

Alternative method 2

$(a =) 12 \div 3 \text{ or } 4$

M1

$$2b + \text{their } a = 24$$

$$\text{or } 2b + 4 = 24$$

$$\text{or } b = 10$$

M1

$$(12 + 24 + 30) - \text{their totals for first and third columns}$$

$$\text{or } 66 - \text{their } 22 - \text{their } 18$$

M1

22, 26 and 18

*SC2 first and third column totals correct**SC1 totals of $3a + b$, $a + b + 2c$, $2a + b$*

A1

[4]**M10.**

(a) $m = p - 5$

B1

(b) $2c = 16$

M1

8

Sc1 for 5 or 9.5

A1

[3]**M11.**

(a) (£) $10 - 6x$

*Condone equation eg $C = 10 - 6x$ or
change = $10 - 6x$*

B1

(b) **Alternative method 1**

$10 - 4x = 2$ their $(10 - 6x)$
ft their (a) if linear

M1

$10 - 4x = 20 - 12x$

or $5 - 2x = 10 - 6x$

*expanding their bracket or dividing through by 2
ft their equation*

M1

$8x = 10$ or $4x = 5$

collecting like terms ft their equation if x on both sides

M1

1.25

ft their (a) if linear

A1ft

Alternative method 2

$c = 10 - 6x$ and $2c = 10 - 4x$

*ft their (a) if linear**Allow any letter except x for c*

M1

$$2c = 20 - 12x \text{ (and } 2c = 10 - 4x)$$

$$\text{Or } c = 10 - 6x \text{ and } c = 5 - 2x$$

M1

$$0 = 10 - 8x \text{ or } 8x = 10$$

$$\text{Or } 0 = 5 - 4x \text{ or } 4x = 5$$

M1

1.25

A1

Alternative method 3

Trial of any price < (£) 10 for both Mary and Ben with change calculated

M1

Trial of a second price < (£)10 for both Mary and Ben with change calculated

If 1.25 is used as the first trial then a second trial is not required

M1

1.25

Note 3 marks only for a numerical method

A1

[5]**M12.**

Any **two** correct expressions from

$$7x - 42$$

$$5x - 6$$

$$2x + 48 \text{ (allow } 2x + 42 + 6)$$

Any **one** correct expression from

$$7x - 42$$

$$5x - 6$$

$$2x + 48 \text{ (allow } 2x + 42 + 6)$$

B2

Forms a correct equation using at least one of their expressions

e.g.1 $7x - 42 = 5x - 6$

e.g.2 $5x - 42 = 2x + 48$

e.g.3 $7x - 42 + 5x - 6 = 2(2x + 48)$

their expressions must be of the form

$$ax + b$$

a and b both non-zero

Award B2 M1 for any of the following

$$3(7x - 42) = 14x \quad \text{or}$$

$$3(5x - 6) = 14x \quad \text{or}$$

$$3(2x + 48) = 14x$$

Award B2 M0 for

$$7x - 42 + 5x - 6 + 2x + 48 = 14x$$

M1

Collects terms correctly for their equation

e.g.1 $7x - 5x = -6 + 42$

e.g.2 $5x - 2x = 48 + 42$

e.g.3 $21x - 14x = 126$

e.g.4 $7x + 5x - 4x = 96 + 42 + 6$

oe

M1

18

A1

[5]

M13.(a) $6f + 3e$ or $3e + 6f$
do not accept further working
eg $6f + 3e = 9fe$

B1

(b) 36

B1

Additional Guidance

Do not allow embedded answer to score any marks without correct answer 36 on answer

[2]

M14.(a) $x - 3$ or $-3 + x$

Do not ignore further working

B1

(b) $x + x - 3 + x + x - 3$

or $4x - 6$

oe

M1

$4x - 6 = 40$ or $4x = 46$

Equating to 46 and collecting like terms

M1dep

11.5

ft their (a)

A1ft

Algebraic method used

Expression for perimeter shown

and equation set up and solved

Strand (ii) Must see working for the method marks to award

Q1ft

Alternative method

$x + x - 3$

or $2x - 3$

oe

M1

$2x - 3 = 20$ or $2x = 23$

Equating to 23 and collecting like terms

M1dep

11.5

*ft their (a)***A1ft**

Algebraic method used

Expression for semi-perimeter shown

and equation set up and solved

*Strand (ii) Must see working for the method marks to award***Q1ft****(b) Additional Guidance**11.5 with no working or from using trial and improvement.
A1 Q0

M1 M1

 $2x - 3 = 40$ (40 implies using Alt. Method 1)
M0 A0 Q0

M0

[5]