M1.

Alternative method 1

$x - 5$ or $x - 7$ or
$x + 5$ or $x + 7$

Any letter

M1

$x + x - 5 + x - 7$ or $3x - 12$

A1

$3x - 12 = 3(x - 4)$ or
$3x + 12 = 3(x + 4)$

Strand (ii)

Correct algebra throughout and showing that their total is a multiple of 3

Q1

Alternative method 2

$x + 5$ or $x - 2$ or
$x - 5$ or $x + 2$

Any letter

M1

$x + x + 5 + x - 2$ or $3x + 3$

A1

$3x + 3 = 3(x + 1)$ or
$3x - 3 = 3(x - 1)$

Strand (ii)

Correct algebra throughout and showing that their total is a multiple of 3

Q1

Alternative method 3

$x + 7$ or $x + 2$ or
$x - 7$ or $x - 2$

Any letter

M1

$x + x + 7 + x + 2$

A1

$3x + 9 = 3(x + 3)$ or $3x + 9$
$3x - 9 = 3(x - 3)$

Strand (ii)

Correct algebra throughout and showing that their total is a multiple of 3

Q1

[3]

M2.(a) (C =) $15x + 20y$
or (C =) $5(3x + 4y)$

Accept 0.15x + 0.2y

B1 for one correct term

Do not ignore further work

Do not accept x15 + y20

B2

(b) 150 × 15 or 90 × 20

150 ÷ 5 and 90 ÷ 5

or 150 × 0.15 or 90 × 0. 20

150 ÷ 5 or 90 ÷ 5
or 15 ÷ 5 or 20 ÷ 5

M1

150 × 15 and 90 × 20

or 150 × 0.15 and 90 × 0. 20

or 15 ÷ 5 and 20 ÷ 5

or 2250 and 1800
or 4050

or 30 and 18

or 22.5 and 18
or 40.5

or 3 and 4

M1dep

4050 ÷ 5
or 810

30 × 15 and 18 × 20
or 450 and 360
or 810

or 40.50 ÷ 5
or 8.10

or 120 and 72
150 × 3 and 90 × 4
or 450 and 360
or 810
or 12 and 16

M1dep

4050 − 810
or 40.50 − 8.10
or 4050 ÷ 5 × 4
or 40.50 ÷ 5 × 4

150 × 12 + 90 × 16
or 1800 + 1440
or 3240

M1dep

32.40

A1

[7]

M3.(a) $2a + 6 + 5a - 5$

or $7a + c$ or $na + 1$

Allow one error

M1

$7a + 1$

Do not accept further work

A1

(b) $5c^6d^5$

B1 for two correct terms

B2

(c) $\frac{2(x-3)}{x+3}$ or $\frac{2x-6}{x+3}$

B1 for $\frac{2(x-3)^2}{(x-3)(x+3)}$ *or* $\frac{8(x-3)}{4(x+3)}$ *or* $\frac{2(x-3)}{1(x+3)}$

Do not accept further work

B2

[6]

M4. Sight of correct common denominator

oe eg $2x^2$

eg $2x$

any common multiple of 2 and x

M1

$\frac{11}{2x} - \frac{6}{2x}$

oe eg $\frac{11x}{2x^2} - \frac{6x}{2x^2}$

A1

$\frac{5}{2x}$

A1

[3]

M5.(a) $9x + 6y$

B1 for each term
Do not ignore fw

B2

(b) $4x + 12$

Do not ignore fw

B1

(c) $x(x - 5)$

Do not ignore fw

B1

[4]

M6. $n + 18$

or $18 \div 2$ or 9

or 45×2

Tries two numbers with a difference of 18
or tries two numbers with a sum of 90

M1

$n + n + 18$ or $n + 9$

or $45 - 9$ or $45 + 9$

or their $90 - 18$ (= 72)

or their $90 + 18$ (= 108)

oe
Different trial

M1

$n + n + 18 = 90$ or $n + 9 = 45$

or $45 - 9$ and $45 + 9$

or their $72 \div 2$

or their $108 \div 2$

oe

3rd trial

M1

Amy 36

36 and 54 in any order

A1

Chris 54

A1

[5]

M7.

(a) $216 \div 4 = 54$ or $4 \times 54 = 216$
or $216 \div 54 = 4$

B1

(b) $x - 5$ or $x + 8$

B1

$x + x - 5 + x + 8 = 54$

oe eg all multiplied by 4

condone one error or omission.

M1

$3x = 51$ or $x + 1 = 18$

Simplifying their linear equation

M1

$x = 17$

A1

£68

ft their 17 × 4 where their 17 is a number of hours.

B1 ft

Alternative 1 (hours)
Two numbers (hours) with a difference of 5 or 8 seen

B1

A set of 3 numbers fitting x, x - 5 and x + 8

$x \neq 54$

M1

Their 3 numbers tested against 54

Dep on previous M1

Total must be seen

M1 dep

17

A1

£68

ft their 17 × 4 where their 17 is a number of hours.

B1 ft

Alternative 2 (money)
Two amounts with a difference of 20 or 32 seen

B1

A set of 3 amounts fitting x, x - 20 and x + 32

M1

Their 3 amounts tested against 216

Dep on previous M1

Totals must be seen

M1 dep

An improved set of three numbers (closer to total of 216)

Totals must be seen

M1

£68

A1

Alternative 3 (combined hours and money)
Two numbers (hours) with a difference of 5 or 8 seen

B1

A set of 3 numbers fitting x, x - 5 and x + 8

$x \neq 54$

M1

Their hours each multiplied by 4 and total tested against 216

Dep on previous M1

Totals must be seen

M1 dep

An improved set of three numbers (closer to total of 216)

Totals must be seen

M1

£68

A1

[6]

M8.(a) $4x$

B1

(b) y^3

B1

(c) $b + a$

B1

[3]

M9.(Bag B =) $3n$ *oe*

Accept other letter used

B1

(Bag C =) $n + 14$ *oe*

Accept other letter used

B1

their $3n$ = their $n + 14$

Consistent use of letter on both sides

M1

7

With B2 awarded
SC1 correct answer without B2 awarded

A1

[4]

M10.(a) $5x \times 5x \times 5x$ or $125x^3$
oe $(5x)^3$

or $5x \times 2x \times x$ or $10x^3$

M1

$5x \times 5x \times 5x - 5x \times 2x \times x$

M1dep

$125x^3 - 10x^3$
SC1 for 125 and 10 seen

A1

(b) 115×3.5^3
$(5 \times 3.5)^3 - 10 \times 3.5^3$

M1

4930(.625) or 4931

A1

[5]

M11.(a) $4a$

B1

)

(b) $6b^2$

B1

(c) $6c - 3$

Mark final answer

B1

[3]

M12. $3x + 4$ (+) $3x$ (+) x (+) x (+) $x - 7$ (= 150)

oe 4 or 5 correct terms

M1

$3x + 4 + 3x + x + x + x - 7 = 150$

oe ft their terms

M1 dep

$9x - 3 = 150$ or $9x = 150 + 3$

oe ft their equation

A1 ft

$x = 17$

SC3 for solution by trial and improvement

A1

[4]

M13.(a) $A = w^2$

Do not ignore further working

or $A = w \times w$

or $\sqrt{A} = w$

B1

(b) $V = w^3$

Do not ignore further working

or $V = w \times w \times w$

or $V = w^2 \times w$

or $\sqrt[3]{V} = w$

B1

(c) $\sqrt{20}$ seen

oe eg decimals

M1

their $(\sqrt{20})^3$

oe eg decimals

or 20 × their $\sqrt{20}$

Accept 40 × $\sqrt{5}$

M1 dep

[89.3, 91.2] or 40 $\sqrt{5}$ or $\sqrt{8000}$

Accept 20 $\sqrt{20}$

A1

[5]