

M1.

$$7x - 4 \text{ or } 3x + 2$$

M1

$$7x - 4 = 3(3x + 2)$$

$$\text{or } 7x - 4 = 9x + 6$$

M1

$$7x - 9x = 6 + 4$$

$$\text{or } -2x = 10$$

$$\text{or } -4 - 6 = 9x - 7x$$

$$\text{or } -10 = 2x$$

oe

*Collecting like terms***M1**

$$-5$$

A1**[4]****M2.**

$$5x - 2 \text{ or } 5(x - 2) \text{ or } 5x - 10$$

oe

B1

$$5x - 2 - (5x - 10)$$

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

$$\text{or } 5x - 10 - (5x - 2)$$

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

oe

M1

or $5x - 2 - 5x + 10 = 8$

or $5x - 10 - 5x + 2 = -8$

oe

*Strand (ii) complete and correct algebra**SC2 At least two pairs of correctly evaluated trials for both number machines with same input and a difference of 8**SC1 One pair of correctly evaluated trials for both number machines with same input and a difference of 8*

Q1

Additional Guidance

Accept other letter used

$x \times 5 - 2$

B1

$x5 - 2$

Do not accept $x - 2 \times 5$ for B1 unless recovered for B1M1 only

$3 \times 5 - 2 = 13$

and $(3 - 2) \times 5 = 5$

SC1

1 3 -5

2 8 0

3 13 5

4 18 10

5 23 15

6 28 20

7 33 25

8 38 30

9 43 35

10 48 40

M3.(a) 1612.5 oe

1.6×10^3 or 1.61×10^3
or 1.612×10^3 or 1.613×10^3

M1

1.6125×10^3

A1

(b) $5.05 \times 10^3 \times 20 + 1000$ oeoe
or 101 000 seen

M1

102 000 oe

SC1 for 100 000 or 1252.5

A1

1.02×10^5

SC2 for 1×10^5 or 1.2525×10^3

B1 ft

[5]

M4.

(a) 7.5

oe. If no answer on answer line, accept answer in output oval

If contradictory answers on answer line and in output oval, answer line takes precedence

B1

(b) 12

oe. If no answer on answer line, accept answer in output oval

If contradictory answers on answer line and in output oval,

answer line takes precedence

B1
[2]

M5.

(a) 7.5

oe. If no answer on answer line, accept answer in output oval

If contradictory answers on answer line and in output oval, answer line takes precedence

B1

(b) 12

oe. If no answer on answer line, accept answer in input oval

If contradictory answers on answer line and in input oval, answer line takes precedence

B1

(c) Any values that work

eg $x^2 - 9$, $x^3 - 18$, $x - 0$

If FD blank accept a clear two operation calculation shown in working, eg $9 \times 3 - 18$ or $x - 0$

If answer on working lines and in FD accept the better answer

Accept more than one answer on working lines (with blank FD) as long as they are all correct

B1
[3]

M6. $16a - 40$ seen

B1

$4a - 8$ or $4b - 8$ or $4(a - 2)$ or $4(b - 2)$

M1

$4(4a - 8) - 8$ or $16a - 32 - 8$

A1

Complete algebraic solution including $b = 4a - 8$ and either $c = 4b - 8$ or $c = 16a - 40$

Strand (ii)

Numerical verification scores zero marks

Q1

[4]

M7.(a) 4

B1

(b) $6x + 8y$ or $8y + 6x$

B1 for (+) $6x$ or (+) $8y$

or B1 $6 \times x + 8 \times y$

or B1 $6x + 8y = 14xy$ or similar further incorrect work

B2

(c) $5 \times 3 (= 15)$ or $(-) 4 \times 2 (= (-) 8)$

M1

7

A1

[5]

M8. $6x - 2 (=) 2x$

oe

M1

$6x - 2x = 2$ or $4x = 2$

oe

M1 dep

$\frac{1}{2}$

oe

A1

Alternative method

Input > 0.5 with correct output

M1

Input < 0.5 with correct output

M1

0.5

oe

A1

[3]

M9. $4(12 - a) = 52$

Condone $12 - a \times 4 = 52$

$$\frac{52}{4} + a = 12$$

$52 \div 4 = 13$ then $12 - ? = 13$

*Trial and improvement $12 - ?$
then $\times 4$ followed by second attempt*

M1

$a = -1$

A1

1st term = 2

A1

Logical working with key steps clearly shown

Strand (ii)

Do not award for trial and improvement

Do not award for initial statement of

$12 - a \times 4 = 52$ unless brackets subsequently used

Q1

[4]

