Task 2:

a) $15 - 7 \times 2$
$= 15 - 14$ ✓
$= 1$ ✓ ②

b) $7 \times 5 - 12 \div (6-4)$
$= 35$ ✓ $- 12 \div 2$
$= 35 - 6$ ✓
$= 29$ ✓ ③

c) $51 - 3[14 - (10-6)]$
$= 51 - 3[14 - 4$ ✓ $]$
$= 51 - 3[10]$
$= 51 - 30$ ✓
$= 21$ ✓ ③

d) $1599 - 10 + 8$
$= 1597$ ✓ ①

e) $(4+2) \times (9 - 2 \times 3)$
$= 6$ ✓ $\times (9 - 6)$
$= 6 \times 3$ ✓
$= 18$ ✓ ③

f) $\dfrac{20 - 4 \times 2}{12 - 24 \div 3}$
$= \dfrac{20 - 8}{12 - 8}$ ✓ ✓
$= \dfrac{12}{4}$ ✓
$= 3$ ✓ ④

✓ Equal to signs
– none missing
✓ Arrows ⊕2

Task 3:

a) $(3c)^2$
$= (3 \times 4)^2$ ✓
$= 12^2$
$= 144$ ✓ ②

b) $4y^3 - 10y + 11$
$= 4(3)^3 - 10(3) + 11$
$= 4 \times 27 - 30 + 11$
$= 108 - 30 + 11$
$= 89$ ✓ ③

c) $4(3z)^2$
$= 4(3 \times 2)^2$ ✓
$= 4 \times 36$ ✓
$= 144$ ✓ ③

d) $ab + 3a - 5 - a^2$
$= (4)(5) + 3(4) - 5 - (4)^2$
$= 20$ ✓ $+ 12$ ✓ $- 5 - 16$ ✓
$= 11$ ✓ ④

Task 4:

a) $3a + 5a$
$= 8a$ ✓ ①

b) $6b + 12 - 4b + 1$
$= 2b$ ✓ $+ 13$ ✓ ②

c) $\dfrac{3Rc - 6}{3}$
$= 13c$ ✓ $- 2$ ✓ ②

d) $4(3d+2) + (7d - 35) \div 7$
$= 12d + 8$ ✓ $+ d - 5$ ✓
$= 13d + 3$ ✓ ④

e) $e^6 \times e^5$
$= e^{11}$ ✓ ①

f) $\dfrac{f^{10}}{f^2}$
$= f^8$ ✓ ①

g) $3g^2 h^5 \times 7gh^3$
$= 21g^3 h^8$ ✓ ✓ ③

h) $6j^2 + 3j - 2j + 7j^2$
$= 13j^2$ ✓ $+ j$ ✓ ②

i) $(6k^3)^2 \times 4k^7$
$= 36k^6$ ✓ $\times 4k^7$
$= 144 k^{13}$ ✓ ④

j) $\dfrac{3m^9 n^3 \times 4mn}{6m^2 n^4} + (m^2)^4$
$= \dfrac{12 m^{10} n^4}{6m^2 n^4}$ ✓ $+ m^8$ ✓
$= 2m^8$ ✓ $+ m^8$
$= 3m^8$ ✓ ④

k) $7pqr - 5qpr$
$= 2pqr$ ✓ ①

✓ Sufficient working
✓ Question written down ⊕2

TASK 5:

a) $a - 12 = 22$

$\underline{a = 34}$ ✓   ①

b) $5b = 13$

$b = \dfrac{13}{5}$ ✓   ①

c) $\dfrac{2c}{17} = 4$

$\dfrac{c}{17} = 2$ ✓ or $2c = 68$

$\underline{c = 34}$ ✓ $c = 34$ ②

d) $3d + 4 = 28$

$3d = 24$ ✓

$\underline{d = 8}$ ✓   ②

e) $12e + 3 = 15e - 60$

$3 = 3e - 60$ ✓

$63 = 3e$ ✓

$\underline{e = 21}$ ✓   ③

f) $4 + 3(2f + 7) + 5f = 7(f - 4) + 9$

$4 + 6f + 21 + 5f = 7f - 28 + 9$ ✓✓

$11f + 25 = 7f - 19$

$4f + 25 = -19$ ✓

$4f = -44$ ✓

$\underline{f = -11}$ ✓   ⑤

g) Let original number = x

$4(x + 3) - 2x = 26$ ✓

$4x + 12 - 2x = 26$

$2x + 12 = 26$

$2x = 14$

$\underline{x = 7}$ ✓   ④

✓ No equal to signs on LHS

✓ Sufficient working   +2

TASK 6:

a) i) 18 ✓
    ii) 21 ✓
    iii) 11 ✓
    iv) $3x + 12$ ✓   ④

b) $x6$ ✓ $+24$ ✓
    or
    $+4 \quad x6$ ②

TASK 8:

1) $2 + 3(5^2 + 35) - \dfrac{20 - 3 \times 2^2}{15 - (8 - (3 - 2))} + (12 \div 4) \times 2 + 7$

$\quad -2(45 - (50 - (60 - 50))) - 2(8 - 2)(8 \times 2) - \dfrac{17^7}{17^6}$

$= 2 + 180 - \dfrac{8}{8} + 6 + 7 - 10 - 120 - 17$

$= \underline{47}$ ✓

2) $8(3a + 7) + a(a^2 + 3a - 5) - \dfrac{16a^2b^3}{8ab^3} +$

$\quad \dfrac{3 \times a \times 6 - 12 \times 4}{6} - a^3 + (3a)^2 + 12\left(3 - \dfrac{(a^3)^2}{a^7 \div a^5}\right) +$

$\quad a^{100} \div a^{99} + 20 \div 4$

$= 24a + 56 + a^3 + 3a^2 - 5a - 2a + 3a - 8$

$\quad - a^3 + 9a^2 + 36 - 12a^2 + a + 5$

$= \underline{21a + 89}$ ✓

3) $xyz - x^2 + (2y)^2 - 10x + x(3y - 5z) -$

$\qquad\qquad\qquad \dfrac{\left(x - \frac{4z}{4z}\right)}{3}$

$= (7)(4)(2) - 49 + 64 - 70 + 7(12 - 10) -$

$\qquad\qquad\qquad \dfrac{\left(\frac{7 - 1}{3}\right)}{}$

$= 56 - 49 + 64 - 70 + 14 - 2$

$= \underline{13}$ ✓

4a) b = 1
b)   c = 2
c)   d = 3
d)   e = 5   ✓ All
e)   f = 8   ④

[120]

Answer Sheet

Name: Memo

Task 1:

✓ 1st term
✓ 2nd term
✓ ALL

a) $$5a\!/\!\!/ + 7 \times b \div (c+2)\!/\!\!/ - \dfrac{8-d}{e \div 2}\!/\!\!/ + 3[f + 2(g-3)]\!/\!\!/ - 6^2\!/\!\!/$$ ③

b) ...... 1 ✓ ......

c) ...... $-8 \times b^2$ ...... ③

Task 3e:

p	3	6
q	2	0
$p+q$	5 ✓	
$6p+11$	29 ✓	47 ✓
$7(5p-6q)$	21 ✓	210 ✓
$q^p + 3$	11 ✓	3 ✓

⑦

Task 7:

a)

Figure Number (p)	Number of blank squares (B)	Number of crossed squares (C)	Number of dots (D)
1	10	2 ✓	17
2	12 ✓	4 ✓	24 ✓
3	14 ✓	6	31 ✓
4	16 ✓	8 ✓	38 ✓
10	28 ✓	20 ✓	80 ✓

⑫

b) ...... $B = 2p + 8$ ✓ ✓ ......

c) ...... $C = 2p$ ✓ ......

d) ...... $D = 7p + 10$ ✓ ✓ ......

e) $B = C + 8$ ✓ or $C = B - 8$

Penalise Only Once −1 Mark
If Just As 2p+8 etc.

⑧