Mark schemes

Q1.

   (a)   63

B1

   (b) $5(y + 1)$ or $5y + 5$

or $(4 + 1)(y + 1)$ or $4y + 4 + y + 1$

B1

Additional Guidance
Condone $(4 + 1) × (y + 1)$

B1

Condone $5 × (y + 1)$ or $5 × y + 5$

B1

Condone missing final bracket $5 × (y + 1$

B1

Do not ignore further incorrect work

   (c) $(x + 1)(y + 1)$

or $x(y + 1) + y + 1$

or $y(x + 1) + x + 1$

or $xy + x + y + 1$

B1

Additional Guidance
Condone $(x + 1) × (y + 1)$

B1

Condone $x × (y + 1) + y + 1$

B1

Do not ignore further incorrect work

   (d) $(2x + 1)(y + 1)$

or $2x(y + 1) + y + 1$

or $y(2x + 1) + 2x + 1$

or $2xy + 2x + y + 1$

B1

Additional Guidance
Condone $(2x + 1) × (y + 1)$

B1

Condone $2x × (y + 1) + y + 1$

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Do not ignore further incorrect work

[4]

Q2.

(a) 511

7 × 73
or 7 is a factor
or 73 is a factor

(b) Incorrect and $2^5 - 1 : 2^7 - 1 \neq 5 : 7$
or 31 : 127 shown

[3]

Q3.

60

[1]

Q4.

105

B2 $a \times b \times c$ with two correct from 3, 7 and 5

B1 $a \times b \times c$ with one correct from 3, 7 and 5

or

any two of 3, 7 and 5 possibilities identified for two of the digits

[3]

Q5.

3 choices for 1st digit

3 × 4 × 3 × 2 (× 1)

72

[3]

Q6.

Alternative method 1

1800

B2 $a \times b \times c \times d$ with at least 3 correct from 9, 10, 10 and 2
B1 $a \times b \times c \times d$ with at least 2 correct from 9, 10, 10 and 2

or
identifies 9 possibilities for first digit
or
identifies 2 possibilities for final digit

B3

Alternative method 2

9000

The number of digits between 1000 and 9999 inclusive

M1

their 9000 ÷ 5

M1dep

1800

A1

[3]