Q1.

Any correct product of 36 using a prime factor

2 and 18
2 and 2 and 9
3 and 12
3 and 3 and 4
2 and 3 and 6
May be on a factor tree or repeated division

M1

2 and 2 and 3 and 3

oe
May be on a factor tree or repeated division

A1

$2^2 \times 3^2$ or $3^2 \times 2^2$

A1

Additional Guidance

Allow any number of 1s included as factors for up to M1A1 only

$1 \times 2^2 \times 3^2$

M1A1A0

$2^2 . 3^2$

M1A1A1

2 + 2 + 3 + 3

M1A1A0

$2^2 + 3^2$

M1A1A0

$2^2 3^2$ or 2^2, 3^2

M1A1A0

$2 \times 2 \times 3 \times 3$ and $2^2 \times 3^2$ on answer line

M1A1A0

but $2 \times 2 \times 3 \times 3 = 2^2 \times 3^2$ on answer line

M1A1A1

$2^2 \times 3^2 = 6^4$

M1A1A0

6×6 with no prime factorisation

M0A0A0

[3]

Q2.

Alternative method 1

Lists the multiples of two of 12, 10, 6
12, 24, 36… 60…
10, 20, 30… 60…
6, 12, 18… 60…

Writes out all the multiples to at least 60

M1

60

May be implied by correct number of boxes

A1

5
and 6
and 10

ft their multiple of 60

B1ft

Alternative method 2

Lists the prime factors of two of
12, 10, 6
12 = 2 × 2 × 3
10 = 2 × 5
6 = 2 × 3

M1

2 × 2 × 3 × 5

May be implied by correct number of boxes

A1

5
and 6
and 10

ft their multiple of 60

B1ft

[3]

Q3.

76

B1

[1]

Q4.

28 (×) 2 or 8 (×) 7 or 14 (×) 2 (×) 2
or 2 (×) 4 (×) 7
or 2, 2, 2, 7

allow on prime factor tree or repeated division

ignore incorrect products if at least one correct product seen

M1

$2 \times 2 \times 2 \times 7$ or $2^3 \times 7$

A1

Additional Guidance

Ignore any × 1 for M1 but not A1

[2]

Q5.

121 and 132

B1

[1]

Q6.

72

B1

[1]

Q7.

Alternative method 1

At least four 4-digit numbers listed

greater than 8000

ie at least four from
8245
8254
8425
8452
8524
8542

M1

6

A1

Alternative method 2

At least four 3-digit numbers listed

using 2, 4 and 5

ie at least four from
245
254
425
452
524
542

M1

6

A1

Alternative method 3

(1 ×) 3 × 2 (× 1)

M1

6

A1

[2]

Q8.

2 (×) 70
or 5 (×) 28
or 7 (×) 20

May be on a diagram

M1

2 × 2 × 5 × 7

Any order

A1

$2^2 \times 5 \times 7$

Any order

A1

[3]

Q9.

3 (×) 75 or 5 (×) 45
or 3 (×) 3 (×) 25 or 5 (×) 5 (×) 9
or 3, 3, 5, 5

May be seen on a factor tree

M1

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

In any order

oe

ie $3 \times 3 \times 5^2$

$3^2 \times 5 \times 5$

A1

[2]

Q10.

26

B1

[1]

Q11.

4

B1

[1]

Q12.

72

B1

[1]

Q13.

(a) Correct product using at least one prime factor

For example
2 (×) 126 or 3 (×) 84 or
7 (×) 36 or 2 (×) 2 (×) 63 or

2 (×) 3 (×) 42
May be implied
eg in a factor tree or repeated division

M1

$2 \times 2 \times 3 \times 3 \times 7$ or
$2^2 \times 3^2 \times 7$

A1

(b) 84

B1

[3]

Q14.

97

B1

[1]

Q15.

1, 2, 3, 6, 9 and 18

B1 for 4 or 5 correct (and 1 incorrect)

B2

[2]

Q16.

2 (×) 140 or 5 (×) 56 or 7 (×) 40

oe Correct product with at least one prime factor

M1

$2 \times 2 \times 2 \times 5 \times 7$

oe

A1

[2]