

## Q1. (2017)

|    |                                                                                                |       |                                                                                                                                                                                                                                               |
|----|------------------------------------------------------------------------------------------------|-------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 13 | <b>Alternative method 1</b>                                                                    |       |                                                                                                                                                                                                                                               |
|    | Valid number of bread rolls and cheese slices                                                  | M1    | eg 30 bread and 60 cheese<br>or 60 bread and 120 cheese<br>or 90 bread and 180 cheese<br>or 120 bread and 240 cheese<br>Valid number means ratio 1 : 2 and can be bought in exact numbers of packs<br>May be implied by valid number of packs |
|    | Valid number of packs of bread rolls and cheese slices                                         | M1dep | eg 2 packs bread and 3 packs cheese<br>or 4 packs bread and 6 packs cheese<br>or 6 packs bread and 9 packs cheese<br>or 8 packs bread and 12 packs cheese<br>Valid number of packs means ratio 2 : 3                                          |
|    | their number of packs of bread $\times$ 1.88 and their number of packs of cheese $\times$ 2.15 | M1dep | eg 15.04 and 25.8(0)                                                                                                                                                                                                                          |
|    | 40.84                                                                                          | A1    | SC2 27.94 or 42.98                                                                                                                                                                                                                            |

|            |                                                                                                                                                 |       |                                                                                                                                                             |
|------------|-------------------------------------------------------------------------------------------------------------------------------------------------|-------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 13<br>cont | <b>Alternative method 2</b>                                                                                                                     |       |                                                                                                                                                             |
|            | Valid number of sandwiches                                                                                                                      | M1    | eg Common multiple of 15 and 20 identified<br>eg 15 30 45 <u>60</u> 75<br>and 20 40 <u>60</u><br>Valid number means can be bought in exact numbers of packs |
|            | $1.88 \div 15 + 2.15 \div 10$<br>or $0.125(\dots) + 0.215$ or $0.34(0\dots)$                                                                    | M1    | oe<br>Cost of one sandwich                                                                                                                                  |
|            | their $0.34(0\dots) \times$ their number of sandwiches                                                                                          | M1dep | dep on M2                                                                                                                                                   |
|            | 40.84                                                                                                                                           | A1    | SC2 27.94 or 42.98                                                                                                                                          |
|            | <b>Additional Guidance</b>                                                                                                                      |       |                                                                                                                                                             |
|            | Alt 1 3rd M1 Allow working in pence                                                                                                             |       |                                                                                                                                                             |
|            | Alt 2 2nd M1 Allow working in pence                                                                                                             |       |                                                                                                                                                             |
|            | 30 bread and 60 cheese/2 packs bread and 3 packs cheese<br>$2 \times 1.88$ or 3.76 <b>and</b> $3 \times 2.15$ or 6.45 (Answer £10.21)           | M3 A0 |                                                                                                                                                             |
|            | 60 bread and 120 cheese/4 packs bread and 6 packs cheese<br>$4 \times 1.88$ or 7.52 <b>and</b> $6 \times 2.15$ or 12.9(0) (Answer £20.42)       | M3 A0 |                                                                                                                                                             |
|            | 90 bread and 180 cheese/6 packs bread and 9 packs cheese<br>$6 \times 1.88$ or 11.28 <b>and</b> $9 \times 2.15$ or 19.35 (Answer £30.63)        | M3 A0 |                                                                                                                                                             |
|            | 150 bread and 300 cheese/10 packs bread and 15 packs cheese<br>$10 \times 1.88$ or 18.8(0) <b>and</b> $15 \times 2.15$ or 32.25 (Answer £51.05) | M3 A0 |                                                                                                                                                             |
|            | SC2 from 120 bread and 120 cheese<br>or 240 bread and 120 cheese                                                                                |       |                                                                                                                                                             |

## Q2. (2020)

| Q | Answer                                                                                                                                                                                                                                                              | Mark | Comments                                                                                                                                                                                                               |
|---|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 6 | 15                                                                                                                                                                                                                                                                  | B2   | B1 answer 3<br>or answer 5<br>or answer 3 (x) 5<br>or $(75 \Rightarrow) 3 (x) 5 (x) 5$ or $(75 \Rightarrow) 3 (x) 5^2$<br>or $(105 \Rightarrow) 3 (x) 5 (x) 7$<br>or (1) 3 5 15 25 (75)<br>or (1) 3 5 7 15 21 35 (105) |
|   | <b>Additional Guidance</b>                                                                                                                                                                                                                                          |      |                                                                                                                                                                                                                        |
|   | NB 15 from $3 + 5 + 7$ does not score unless working for B1 seen elsewhere                                                                                                                                                                                          |      |                                                                                                                                                                                                                        |
|   | Prime factor responses for B1 may be seen in repeated division, on a factor tree or in a Venn diagram<br>eg1 3 5 5 in repeated division or factor tree for 75<br>eg2 3 5 7 inside one circle of a Venn diagram<br>eg3 3 5 inside the intersection of a Venn diagram |      | B1<br>B1<br>B1                                                                                                                                                                                                         |
|   | For products of prime factors, repeated division, factor trees and Venn diagrams, ignore inclusion of factors of 1                                                                                                                                                  |      |                                                                                                                                                                                                                        |
|   | A repeated division needs to reach the final prime factor but does not need to reach 1                                                                                                                                                                              |      |                                                                                                                                                                                                                        |
|   | B1 can be awarded even if LCM is subsequently worked out                                                                                                                                                                                                            |      |                                                                                                                                                                                                                        |
|   | List of factors may be seen as factor pairs                                                                                                                                                                                                                         |      |                                                                                                                                                                                                                        |

## Q3. (2021)

| Q | Answer  | Mark | Comments |
|---|---------|------|----------|
| 1 | $x - 5$ | B1   |          |

## Q4. (2022)

| Q | Answer                                                                                                                                                                                                                                                                                               | Mark | Comments                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|---|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 6 | 125 and 17<br>or $5^3$ and 17<br>or 5 and 5 and 5 and 17                                                                                                                                                                                                                                             | B2   | together in any order<br>eg $125 \times 17$ or $17 \times 5^3$ or 5, 5, 5, 17<br>or $2125 \div 17 = 125$ or $2125 \div 125 = 17$<br>B1 at least three of 8, 27, 64, 125, 216, 343, 512, 729, 1000, 1331, 1728, 2197 etc (allow $2^3, 3^3, 4^3$ etc)<br>or<br>all four of 11, 13, 17, 19 (ignore any numbers not between 10 and 20)<br>or<br>(cube number $> 1$ ) $\times$ (prime number between 10 and 20)<br>or<br>$2125 \div$ (cube number $> 1$ )<br>or<br>$2125 \div$ (prime number between 10 and 20) |
|   | <b>Additional Guidance</b>                                                                                                                                                                                                                                                                           |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|   | B1 may be awarded for correct work with no, or incorrect answer, even if this is seen amongst multiple attempts                                                                                                                                                                                      |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|   | B2 responses may be seen on a factor tree                                                                                                                                                                                                                                                            |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|   | B1 for three cube numbers given in index form – evaluations can be ignored<br>eg $4^3$ $5^3$ $6^3$ scores B1 with no evaluations or with incorrect evaluations                                                                                                                                       |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|   | B1 for multiplications or divisions – evaluation can be ignored<br>eg1 $2^3 \times 13$ scores B1 with no evaluation or evaluated incorrectly<br>eg2 $2125 \div 27$ scores B1 with no evaluation or evaluated incorrectly<br>eg3 $2125 \div 11$ scores B1 with no evaluation or evaluated incorrectly |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|   | 125 and 17 seen in multiple attempts is B2 if 2125 included<br>eg $125 \times 17 = 2125$ or $2125 \div 17 = 125$ or $2125 \div 125 = 17$ seen amongst multiple attempts                                                                                                                              |      | B2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|   | 125 and 17 seen in multiple attempts is B1 if 2125 not included<br>eg $125 \times 17$ seen amongst multiple attempts                                                                                                                                                                                 |      | B1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|   | 11 13 15 17 19 does not score B1 unless 11 13 17 19 selected                                                                                                                                                                                                                                         |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|   | Incomplete list eg 11 13 19 does not score B1                                                                                                                                                                                                                                                        |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |