

## Mark Scheme

Q1.

| Question                        | Skills Standard | Process   | Mark     | Mark Grid | Evidence  |
|---------------------------------|-----------------|---|----------|-----------|---|
|                                 | R1              | Starts to substitute or reverse substitute into formula | 1 or     | A         | $15 \times 2 (=30)$ OR $10 \times 5 (=50)$ OR<br>$15 \div 5 (=3)$ OR $10 \div 2 (=5)$   |
|                                 | A4              | Completes substitution                                  | 2 or     | AB        | '30' $\div$ 5(=6) OR '50' $\div$ 2(=25) OR<br>'3' $\times$ 2(=6) OR '5' $\times$ 5(=25) |
|                                 | I6              | Conclusion with correct answer                          | 3        | ABC       | No AND 6(cups) OR<br>No AND 25 people   |
|                                 | A5              | Valid check   | 1        | D         | Reverse process or alternative calculation  |
| <b>Total marks for question</b> |                 |   | <b>4</b> |           |   |

Q2.

| Question                        | Skills Standard | Process                                 | Mark     | Mark Grid | Evidence   |
|---------------------------------|-----------------|---|----------|-----------|--|
|                                 | R3              | Begins to work with the rule            | 1 or     | M         | e.g. $136 \times 7 (=952)$ OR<br>$152 \times 7 (=1064)$ OR<br>'16' $\times$ 7 (=112)   |
|                                 | A4              | Full process to use the rule            | 2        | MN        | e.g. '952' $\div$ 10 (=95.2) OR<br>'1064' $\div$ 10 (=106.4) OR<br>'112' $\div$ 10 (=11.2)                                   |
|                                 | A4              | Works with a difference or mileage      | 1 or     | P         | $152 - 136 (=16)$ OR<br>'106.4' - '95.2' (=11.2) OR<br>'95.2' $\times$ 26 (=2475.2) OR<br>'106.4' $\times$ 26 (=2766.4)      |
|                                 | R3              | Full process to find figures to compare | 2 or     | PQ        | '11.2' $\times$ 26 (=291.2) OR<br>'2766.4' - '2475.2' (=291.2) OR<br>'2475.2' + 300 (=2775.2) OR<br>'2766.4' - 300 (=2466.4) |
|                                 | I6              | Valid decision with accurate figures    | 3        | PQR       | No AND 291(.2) (calories)<br>No AND 2775(.2) and 2766(.4)<br>No AND 2475.6 and 2466.4  |
| <b>Total marks for question</b> |                 |   | <b>5</b> |           |  |

Q3.

| Question                        | Skills Standard | Process                                 | Mark     | Mark Grid | Evidence  |
|---------------------------------|-----------------|---|----------|-----------|---|
|                                 | R2              | Begins to use formula                   | 1 or     | L         | $192 \times 15 (=2880)$ OR<br>$54 \times 50 (=2700)$  |
|                                 | A4              | Full process to find figures to compare | 2 or     | LM        | '2880' $\div$ 50 (=57.6) OR<br>'2700' $\div$ 15 (=180) OR<br>$192 \times 15 (=2880)$ and $54 \times 50 (=2700)$ |
|                                 | I6              | Valid decision with accurate figure     | 3        | LMN       | e.g. Yes AND 57.6 OR<br>Yes AND 180 (max bpm) OR<br>Yes AND 2880 and 2700 OR<br>Yes AND 3.6 (more)              |
| <b>Total marks for question</b> |                 |   | <b>3</b> |           |   |

**Q4.**

| Question                        | Skills Standard | Process                               | Mark     | Mark Grid | Evidence  |
|---------------------------------|-----------------|---------------------------------------|----------|-----------|---|
| (a)                             | R1              | Works with percentage                 | 1 or     | A         | $3200 \times 0.15 (=480)$ oe<br>2720 seen implies this mark   |
|                                 | I6              | Correct answer                        | 2        | AB        | (£)480  |
|                                 | A5              | Valid check                           | 1        | C         | Reverse process or alternative method or estimation<br>E.g. $480 \div 3200 = 0.15$  |
| (b)                             | R3              | Starts to process formula             | 1 or     | D         | $7.25 + 3.75 (=11)$ OR $44 \div 4 (=11)$ OR<br>$(7.25 + 3.75) \times 4$ (condone missing brackets)  |
|                                 | A4              | Full process to work with formula     | 2 or     | DE        | '11' $\times$ 4 (=44) OR '11' $-$ 3.75 (=7.25) OR<br>'11' $-$ 7.25 (=3.75) OR<br>$7.25 + 3.75 (=11)$ and $44 \div 4 (=11)$  |
|                                 | I6              | Correct answers with accurate figures | 3        | DEF       | Yes and 44(m) with correct working OR<br>Yes and 7.25(m) with correct working OR<br>Yes and 3.75(m) with correct working OR<br>Yes and 11 (m) seen from two processes |
| <b>Total marks for question</b> |                 |                                       | <b>6</b> |           |   |

**Q5.**

| Question | Skills Standard | Process   | Mark | Mark Grid | Evidence  |
|----------|-----------------|---|------|-----------|---|
| (a)      | R1              | Starts to substitute in formula or reverse substitute | 1 or | C         | $350 \times 64 (=22400)$ OR<br>$64 \div 300 (=0.213...)$ OR<br>$75 \times 300 (=22500)$ |
|          | A4              | Completes full substitution                           | 2    | CD        | $350 \times 64 \div 300 (=74.66...)$ OR<br>$75 \times 300 \div 64 (=351.5625)$          |
|          | I6              | Correct answer  | 1    | E         | [74.6, 74.7] OR [351.5, 351.6]  |

| Question                        | Skills Standard | Process  | Mark     | Mark Grid | Evidence  |
|---------------------------------|-----------------|--|----------|-----------|---|
| (b)                             | R2              | Works with consistent units  | 1 or     | F         | 3000 m <b>OR</b> 0.5 km<br>May be seen in subsequent calculations   |
|                                 | R3              | Process to find number of 500 m cycled   | 2 or     | FG        | $3000 \div 500 (=6)$ <b>OR</b><br>Build-up method at least 2 stages seen <b>OR</b><br>$3 \div 0.5 (=6)$       |
|                                 | A4              | Process to find calories burned on Friday or calories needed to be burned by cycling 500 m | 3        | FGH       | $18 \times '6' (=108)$ <b>OR</b><br>complete build-up method <b>OR</b><br>$100 \div '6' (=16.6\dots)$         |
|                                 | I6              | Valid decision with accurate figures   | 1        | J         | Yes <b>AND</b> 108 (calories) <b>OR</b><br>Yes <b>AND</b> (only need to burn) 16.(66...) (calories) per 500 m |
| <b>Total marks for question</b> |                 |  | <b>7</b> |           |   |

Q6.

| Question | Skills Standard | Process                                     | Mark | Mark Grid | Evidence  |
|----------|-----------------|---|------|-----------|---|
| (a)      | R2              | Starts process to work with instructions    | 1 or | H         | $2.75 + 1.25 + 1.95 + 2.25 + 1 + 1.45 (=10.65)$ <b>OR</b><br>$140 \div 80 (=1.75)$  |
|          | A4              | Continues to work with instructions         | 2 or | HJ        | $'10.65' \div 6 (=1.775)$ <b>OR</b> $'1.75' \times 6 (=10.5)$ <b>OR</b><br>$'10.65' \times 80 (=852)$ <b>OR</b><br>$140 \times 6 (=840)$  |
|          | R3              | Completes process to work with instructions | 3    | HJK       | $'1.775' \times 80 (=142)$ <b>OR</b><br>$2.75 + 1.25 + 1.95 + 2.25 + 1 + 1.45 (=10.65)$ <b>and</b> $'1.75' \times 6 (=10.5)$ <b>OR</b><br>$'10.65' \div 6 (=1.775)$ <b>and</b> $140 \div 80 (=1.75)$ <b>OR</b><br>$'10.65' \times 80 (=852)$ <b>and</b> $140 \times 6 (=840)$ |
|          | I6              | Correct decision with accurate figures      | 1    | L         | Yes <b>and</b> (£)[141.6, 142.4] <b>OR</b><br>Yes <b>and</b> (£)10.5 <b>and</b> (£)10.65 <b>OR</b><br>Yes <b>and</b> (£)[1.77, 1.78] <b>and</b> (£)1.75 <b>OR</b><br>Yes <b>and</b> (£) 852 <b>and</b> (£) 840  |

| Question                        | Skills Standard | Process                                | Mark     | Mark Grid | Evidence  |
|---------------------------------|-----------------|--|----------|-----------|---|
| (b)                             | R2              | Starts process to find amount          | 1 or     | M         | $400 + 100 + 250 + 50 (=800)$ <b>OR</b><br>$600 \div 4 (=150)$ <b>OR</b><br>$400 \div 5 (=80)$ <b>OR</b> $100 \div 5 (=20)$ <b>OR</b><br>$250 \div 5 (=50)$ <b>OR</b> $50 \div 5 (=10)$   |
|                                 | A4              | Continues process                      | 2 or     | MN        | $'800' \div 5 (=160)$ <b>OR</b> $'150' \times 5 (=750)$ <b>OR</b><br>$'80' \times 4 (=320)$ <b>oe</b> <b>OR</b><br>$'20' \times 4 (=80)$ <b>oe</b> <b>OR</b><br>$'50' \times 4 (=200)$ <b>oe</b> <b>OR</b><br>$'10' \times 4 (=40)$ <b>oe</b> <b>OR</b><br>$'80' + '20' + '50' + '10' (=160)$ |
|                                 | A4              | Completes process                      | 3        | MNP       | $'160' \times 4 (=640)$ <b>oe</b> <b>OR</b><br>$'150' \times 5 (=750)$ <b>and</b> $400 + 100 + 250 + 50 (=800)$ <b>OR</b><br>$'80' + '20' + '50' + '10' (=160)$ <b>and</b> $600 \div 4 (=150)$  |
|                                 | I6              | Correct decision with accurate figures | 1        | Q         | No <b>and</b> (£)640 <b>OR</b><br>No <b>and</b> (£)750 <b>and</b> (£)800 <b>OR</b><br>No <b>and</b> (£)160 <b>and</b> (£)150  |
| <b>Total marks for question</b> |                 |  | <b>8</b> |           |   |

**Q7.**

| Question                           | Skills Standard | Process                                  | Mark | Mark Grid | Evidence   |
|------------------------------------|-----------------|--|------|-----------|--|
| (a)                                | A4              | Process to find percentage               | A    | 1 or      | $25 \div 100 \times 72 (=18)$ oe<br>NB if 54 seen award mark A only  |
|                                    | I6              | Correct answer                           | AB   | 2         | (£)18  |
| (b)                                | R3              | Starts to substitute into formula        | C    | 1 or      | $17 \times 11 (=187)$ OR $33 \times 5 (=165)$  |
|                                    | A4              | Full process to use formula              | CD   | 2 or      | $17 \times 11 \div 5 (=37.4)$ OR $33 \times 5 \div 11 (=15)$   |
|                                    | I6              | Makes decision with accurate figures     | CDE  | 3         | No AND 37(.4)(pounds) OR<br>No AND 15(kg)  |
|                                    | A5              | Valid check                              | F    | 1         | E.g. Reverse calculation or estimation or alternative method   |
| (c)                                | I6              | Extracts relevant data from table        | G    | 1         | 249.5, 57.50, 63.95, 22.95<br>May be seen in subsequent working  |
|                                    | R3              | Process to add or subtract the prices    | H    | 1 or      | '249.5' + '57.50' + '63.95' + '22.95' (=393.9)<br>OR<br>Subtracts at least three of these figures 249.5, 57.50, 63.95, 22.95 from 316.95<br>NB allow 1 error or omission |
|                                    | A4              | Complete process to find saving          | HJ   | 2         | E.g. '393.9' – 316.95 (=76.95)   |
|                                    | I6              | Correct answer in correct money notation | K    | 1         | £76.95 (correct money notation required)   |
| <b>Total marks for question is</b> |                 |  |      | <b>10</b> |  |

**Q8.**

| Question                        | Skills Standard | Process   | Mark | Mark Grid | Evidence   |
|---------------------------------|-----------------|---|------|-----------|--|
| a                               | R2              | Process to calculate the number of tiles needed in 1 dimension or works with area                     | 1 or | E         | $240 \div 60 (= 4)$ OR<br>$240 \div 30 (= 8)$ OR<br>$300 \div 60 (= 5)$ OR<br>$300 \div 30 (= 10)$ OR<br>$240 \times 300 (=72000)$ OR<br>$60 \times 30 (= 1800)$ |
|                                 | A4              | Process to calculate the number of tiles needed in both dimensions or process to calculate both areas | 2 or | EF        | $240 \div 60 (= 4)$ and $300 \div 30 (= 10)$ OR<br>$240 \div 30 (= 8)$ and $300 \div 60 (= 5)$ OR<br>$240 \times 300 (=72000)$ and $60 \times 30 (= 1800)$       |
|                                 | A4              | Process to calculate the number of tiles needed to cover the wall                                     | 3    | EFG       | '4' × '10' (=40) OR<br>'8' × '5' (=40) OR<br>$72000 \div 1800 (=40)$ oe OR<br>$1800 \times 6 (=10800)$   |
|                                 | I6              | Finds correct number of tiles needed  | 1    | H         | 40 (tiles) OR 10800 (cm <sup>2</sup> in a box)   |
|                                 | R3              | Process to find number of boxes   | 1 or | J         | '40' ÷ 6 (=6.6....) OR<br>$72000 \div 10800 (=6.6....)$  |
|                                 | I6              | Finds number of boxes from their working provided E and F awarded                                     | 2    | JK        | 7 (boxes) ft their answer provided marks E and F are awarded   |
| b                               | R2              | Begins to substitute into formula   | 1 or | L         | $32 \times 11 \div 10 (= 35.2)$ OR $40 \times 10 \div 11 (=36.3...)$   |
|                                 | I6              | Correct decision with explanation   | 2    | LM        | e.g No and 35.2 or 36 (tiles)<br>No and 36.3... (tiles estimated)  |
| <b>Total marks for question</b> |                 |   |      | <b>8</b>  |  |

**Q9.**

| Question   | Skills Standard | Process                                 | Mark | Mark Grid | Evidence   |
|------------|-----------------|---|------|-----------|--|
| <b>(a)</b> | R1              | Works with consistent units             | 1    | A         | e.g. 550 (cm) <b>or</b> 1.45 (m) <b>or</b> 2.7 (m)<br>May be seen in subsequent working  |
|            | R2              | Begins to work with formula             | 1 or | B         | e.g. $145 \times 2 (=290)$ <b>OR</b><br>$550 - 270 (=280)$   |
|            | A4              | Full process to work with formula       | 2 or | BC        | e.g. '290' + 270 (=560 cm) <b>OR</b><br>'280' $\div$ 2 (=140cm)  |
|            | I6              | Valid decision with accurate figures    | 3    | BCD       | e.g. No <b>AND</b> 560 (cm) ( <b>and</b> '550' (cm) oe) <b>OR</b><br>No <b>AND</b> 140 (cm) oe <b>OR</b><br>No <b>AND</b> 5.6 (m)  |
| <b>(b)</b> | R1              | Begins to work with costs               | 1 or | E         | e.g. $1.80 \div 4 (=0.45)$ oe <b>OR</b><br>$2.28 \div 6 (=0.38)$ oe <b>OR</b><br>$1.80 + 4 \times 0.1 (=2.2)$ oe   |
|            | R3              | Develops solution                       | 2 or | EF        | e.g. $1.80 \div 4 (=0.45)$ oe <b>and</b> $2.28 \div 6 (=0.38)$ oe <b>OR</b><br>'0.45' $\times$ 6 (=2.7) <b>OR</b><br>'0.38' $\times$ 4 (=1.52) <b>OR</b><br>'0.45' - 0.1 (=0.35) oe <b>or</b> '0.38' + 0.1 (=0.48) oe <b>OR</b><br>'2.2' $\div$ 2 (=1.1) oe <b>and</b> $2.28 \div 3 (=0.76)$ oe            |
|            | A4              | Full process to find figures to compare | 3 or | EFG       | e.g. '0.45' - '0.38' (=0.07) oe <b>OR</b><br>'2.7' - 2.28 (=0.42) <b>and</b> $0.1 \times 6 (=0.6)$ <b>OR</b><br>$1.80 - 1.52 (=0.28)$ <b>and</b> $0.1 \times 4 (=0.4)$ <b>OR</b><br>'0.35' <b>and</b> '0.38' oe <b>OR</b><br>'0.45' <b>and</b> '0.48' oe <b>OR</b><br>'1.1' <b>and</b> '0.76' oe <b>OR</b> |

|                                 |    |                                      |          |      |  |
|---------------------------------|----|--------------------------------------|----------|------|--|
|                                 | I6 | Valid decision with accurate figures | 4        | EFGH | 0.45 <b>and</b> 0.38 oe<br>e.g. No <b>AND</b> 7(p) oe<br><b>OR</b><br>No <b>AND</b> 42(p) <b>and</b> 60(p) oe <b>OR</b><br>No <b>AND</b> 28(p) <b>and</b> 40(p) oe <b>OR</b><br>No <b>AND</b> 35(p) <b>and</b> 38(p) oe <b>OR</b><br>No <b>AND</b> 45(p) <b>and</b> 48(p) oe |
|                                 | A5 | Valid check                          | 1        | J    | Valid check, e.g. reverse calculation, alternate method or approximation.  |
| <b>Total marks for question</b> |    |                                      | <b>9</b> |      |  |