



Lite GCSE Maths

Measures Problem Solving 1
Mark Scheme

Name: _____

Class: _____

Author:

Date:

Time: 33

Marks: 27

Comments:

M1. 5×4.47 **M1**

Their 22.35×27 **M1 dep**

603 **A1**

$600 < 603$ so not speeding
oe **A1**

Alternate method

$600 \div 27 (= 22.22)$ **M1**

Their $22.22 \times 10 \div 4.47$ **M1 dep**

49.71 **A1**

$49.71 < 50$ so not speeding
oe **A1**

[4]

M2. 25 **B2**

30 or 5 or 50 seen B1

[2]

M3. (a) (i) 210 **B1**

(ii) 170 **B1**

(iii) $50 \times (\text{their } 210) \div (\text{their } 170)$ **M1**

$61.7(\dots)$ or 61.8
or 62 with method
ft From their T and $a + b + c$ **A1ft**

(b) Fair

ft From their F

B1ft

[5]

M4. 300 × 440

Note 300 × 440 or 300 × 400 scores M0

M1

132 000

A1

132 kg

B1ft

[3]

M5. 34.5 and 35.5 or 25 and 35

condone 35.4999 ... and 34.999...

M1

any value ≥ 34.5 and < 35

Allow 35

A1

[2]

M6. (a) 80 × 1.75

accept 80 × 1.45 and 80 × 105

M1

140

A1

(b) $\{190 - (\text{their } 140)\} \div (2.25 - 1.75)$

Or (their 50) $\div 0$.

Allow (their 50) in 30 minutes

M1

100

ft from their (a)

A1 ft

[4]

M7. Sight of 5250 or 5350

B1

Sight of 95 or 105

B1

Their correct combination

ie. $\frac{\text{Min strain}}{\text{Max crate}} = \frac{5250}{105}$

M1

= 50

*Accept 49, with explanation that 50 would be right on the limit,
hence 49 is the maximum*

A1

[4]

M8. 45

B1

140

B1

105

B1

[3]

E1.

This question is drawn from our specimen paper produced in advance of live examinations. As such, the question was not used in a live examination and therefore no Examiner's Remarks exist.

E2. This question was rarely incorrect. The occasional arithmetic error occurred.

E3. About 75% of the candidates managed to convert 3 minutes 30 seconds to seconds, in part (a)(i). Some forgot to add on 30 and just gave 180 as their answer. Others did not appear to know that there were 60 seconds in a minute.

In part (a)(ii), as expected, nearly all candidates scored this very straightforward mark.

About half the candidates managed to substitute their values correctly and most of these worked out the fitness index correctly, in part (a)(iii). A common error was to forget to multiply by 50.

Most candidates managed to convert their fitness index to a fitness grade correctly in part (b).

E4. This question was a good discriminator. Many good responses were seen, and the majority of candidates had some success. Credit was given to candidates who correctly converted 'their' answer to kilograms.

E5. This was fairly well done with a lot of candidates scoring full marks. Most of the rest scored zero with hardly any candidate scoring 1 mark for showing a correct set of limiting values for one of the measures

E6. Intermediate Tier

Part (a) was reasonably well done with a lot of candidates appreciating the correct relationship between speed, distance and time. Most correct answers were obtained by first finding $\frac{3}{4}$ of 80 with 1.45×80 ; these were seen frequently 1.75×80 rarely being seen. Candidates were allowed a generous 1 mark for either $105 \div 80$ or 1.45×80 ; these were seen frequently.

Most candidates did not read part (b) properly and attempted to work out $190 \div 135$ (or, worse, 190×135).

Higher Tier

In part (a) many used the formula 'distance = speed x time' but the handling of 1 h 45min was poor. It frequently became 1.45 or 105, resulting in a loss of the accuracy mark. Part (b) was meant to follow on from part (a) but too many did not spot this and attempted $190 \div 2.15$. Those who did manage to arrive at $50 \div 0.5$ thought that the answer was 25.

- E7.** This was yet another question testing the 'using and applying' element of the specification. Careful reading of the question will convince the candidate that they must be sure that the cable does not break. This, hopefully, is the clue needed to ensure the use of the minimum strain divided by the maximum crate weight. There were some who did not appreciate the need for any upper/lower bounds at all, but most candidates did realise the need for this. Marks were given for quoting either limit for crane strain or crate weight but use of an incorrect combination meant no further scoring. There were probably more who picked the wrong combination than the right one. For those who did select the correct combination the resulting easy arithmetic was a just reward.
- E8.** Most candidates were able to interpret the diagram and understand what was required, although there were a number of arithmetical errors.

