

1. Change 2.5 m^2 to cm^2 .

..... cm^2
(Total 2 marks)

2. Change 8 m^3 to cm^3 .

..... cm^3
(Total 2 marks)

3. Here is a tile in the shape of a polygon.

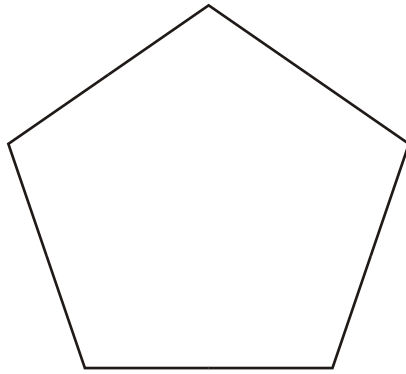


Diagram **NOT**
accurately drawn

The area of the tile is 8560 mm^2 .

Change 8560 mm^2 to cm^2 .

..... cm^2
(Total 2 marks)

4. Change 7 m^2 to cm^2 .

..... cm^2
(Total 2 marks)

5. James and Sam went on holiday by plane.

The pilot said the speed of the plane was 285 kilometres per hour.

James told Sam that 285 kilometres per hour was about the same as 80 metres per second.

Was James correct?

Show working to justify your answer.

(Total 3 marks)

6. Change 50 000 mm² to cm².

..... cm²
(Total 2 marks)

7. Ron went to Spain.

He changed £200 into Euros (€).

The exchange rate was £1 = €1.40

- (a) How many Euros did he get?

€.....

(2)

When he came home he changed €10.64 back into pounds.
The exchange rate was now £1 = €1.33

- (b) How many pounds did he get?

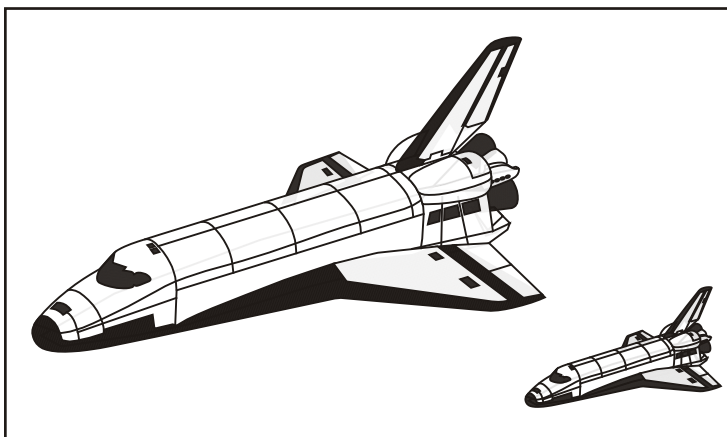
£.....

(2)

(Total 4 marks)

8.

Picture **NOT** accurately drawn



A model of a space shuttle is made to a scale of 2 centimetres to 1 metre.

The length of the space shuttle is 24 metres.

- (a) Work out the length of the model.
Give your answer in centimetres.

.....cm (2)

The height of the model is 10 centimetres.

- (b) Work out the height of the space shuttle.
Give your answer in metres.

.....m (2)
(Total 4 marks)

9. Change 1.2 cubic metres to cubic centimetres.

..... cubic centimetres (Total 2 marks)

10. Change 57 000 000 cubic centimetres to cubic metres.

.....cubic metres (Total 2 marks)

1. 25 000 2
 $2.5 \times 10\ 000$
M1 for $2.5 \times 100 \times 100$
A1 cao
[2]
2. 8000000 2
 8×1000000
M1 for $100 \times 100 \times 100$
A1 cao
3. 85.6 2
 $8560 \div (10 \times 10)$
M1 for $8560 \div (10 \times 10)$ oe
A1 for 85.6
[2]
4. 70 000 2
 $7 \times 10\ 000$
M1 for $7 \times 10\ 000$ or $7 \times 100 \times 100$
A1 cao
[2]
5. $285 \times 1000 / (60 \times 60) = 79.1\dot{6}$ 3
M2 for $285 \times 1000 \div 60 \div 60$
or $80 \times 60 \times 60 \div 1000$
or for a correct method to obtain two comparable values
e.g $80 \times 60 \times 60$ and 285×1000
(M1 for $285 \div 60 \div 60$ or 0.079 (....) seen
or $80 \times 60 \times 60$ or 288000 seen
or for 285×1000 or 285000 seen
or $80 \div 1000$ or 0.08 seen)
A1 for 288 or 79.(....) or for two correctly calculated
comparable values e.g 288000 and 285000
[3]

6. $50000 \div 10^2 = 50000 \div 100 = 500$ 2
MI for $50000 \div 10^2$
AI cao [2]
7. (a) $\frac{200 \times 1.40}{280}$ 2
MI for 200×1.40 or 28000 seen
AI for 280 cao
- (b) $\frac{10.64 \div 1.33}{8.00}$ 2
MI for $10.64 \div 1.33$
AI for 8 or 8.0 or 8.00 [4]
8. (a) $\frac{24 \times 2}{48}$ 2
MI for 24×2 or $24 \times 2 \times 100$ or 24×200
AI cao
SC: 480, 4800 gets B1
- (b) $\frac{10 \div 2}{5}$ 2
MI for $10 \div 2$, or multiplication of a scale factor like 1 : "50"
AI cao [4]
9. 1200000 2
 1.2×10^6
MI $100 \times 100 \times 100$ or 10^6 oe
AI cao [2]

10. $57\,000\,000 \div 100 \div 100 \div 100$
57

2

M1 for 100^3 oe seen or used
Al cao

[2]

1. Mathematics A

Paper 2

This question was again not understood by candidates entered for this tier and it was very poorly answered. Less than 1% of candidates got this question correct. The most commonly seen incorrect answer was 250. No method was shown.

Paper 4

Candidates rarely gained any marks on this question with the majority multiplying 2.5 by 100 to give an answer of 250. Other incorrect answers seen included 0.025 and 2500. Some candidates confused 2.5m^2 with 2.5^2 .

Mathematics B Paper 17

Very poorly done indeed other than for a handful of correct answers. $2.5 \times 100 = 250$ being the usual incorrect solution offered.

2. Candidates rarely gained any marks on this question with the majority multiplying 8 by 100 to give an answer of '800'.

3. Mathematics A

- (a) Candidates at this tier always find the concept of a vertex difficult to remember. This year proved to be no exception. Only 17% gained one mark for this part.
- (b) This also proved to be too difficult for 75% of candidates. Many candidates thought it was a hexagon, some repeated polygon whilst others named some quadrilaterals or said it was a five sided shape.

Mathematics B Paper 14

Only 10% of the candidates could work out the number of vertices and surprisingly less than 30% could provide an answer that could be identified as 'pentagon' in part (b).

4. Specification A**Foundation Tier**

It seems candidates taking this paper had little idea of how to convert area from one unit to another, despite this topic being the subject of several questions in recent years. There were hardly any correct attempts less than 1%. Most candidates multiplied by the linear scale factor 100 or 1000.

Intermediate Tier

Disappointingly, this question was answered very poorly. Most candidates converted from metres to centimetres and gave an answer of 700, not appreciating that they were dealing with square units. A number of other incorrect methods were seen such as squaring 700 to get 490000 and squaring 7 and then multiplying by 100 to give 4900.

Specification B**Foundation Tier**

Changing 7m^2 to cm^2 was beyond all but a handful of candidates. Many wrote that $1\text{m} = 100\text{cm}$ but did not see the connection with what was required. Perhaps recognition of $1 \times m \times 1 \times m$ giving 1m^2 leading to $100 \times \text{cm} \times 100 \times \text{cm}$ producing 10000 might help them on their way. As it was 7×7 provided the only inspiration they could find.

Intermediate Tier

There are still very few successes to report in this type of unit conversion, 700 being by far the most common mistake. Other common errors were 490000 (700^2), 7000 and 1400.

5. Candidates found this a challenging question and a wide variety of approaches were seen. Almost a quarter of candidates gained full marks and there were some excellent responses which were well set out and easy to follow. Converting 285 kilometres per hour into metres per second was the approach most commonly seen. A significant number of candidates did not know how to start the process but many of those who persevered gained at least one mark. Often this was for 285×1000 or for $285 \div 60 \div 60$. The most common errors were for candidates to multiply 285 by 100 instead of by 1000 and to divide 285 by 60 just once. Some attempted to compare two speeds with different units, e.g. 288000 and 285.
6. The majority failed to get any marks, using the conversion of $10\text{mm} = 1\text{cm}$ to perform the conversion of square units, giving 500 as the answer.
7. Exchange rates are a common question on these papers, but despite this candidates do find them difficult. 50% of candidates were able to change by multiplying in part (a) but this reduced to 40% in part (b) when they had to divide.

8. This was a well answered question, with most candidates getting full marks in both parts. Those that were wrong usually gave the answer 12 in part (a) and 20 in part (b), clearly inverting the multiplication and division by 2. Some candidates failed to read part (b) correctly and were tripped up by the requirement to give the answer in metres.

9. This question was answered very poorly. The vast majority of candidates gave the answer incorrectly as 120 cm^3 . Another incorrect method was to cube 120 rather than 100. Very few correct solutions were seen.

10. Over 70% of candidates were unable to score any marks on this question. The most common error was to divide by 100 instead of 100^3 .