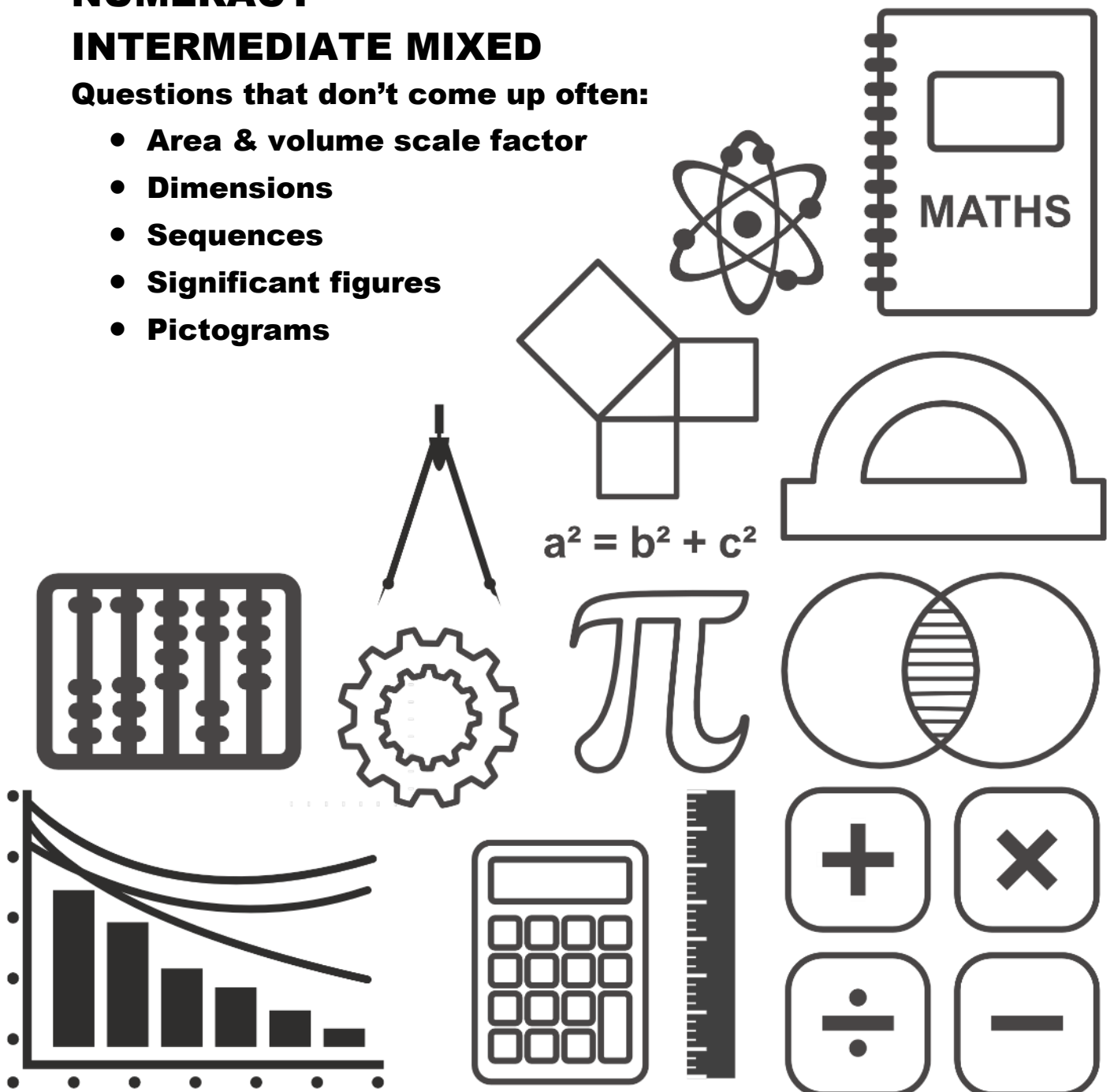


GCSE TOPIC BOOKLET NUMERACY INTERMEDIATE MIXED

Questions that don't come up often:

- Area & volume scale factor
- Dimensions
- Sequences
- Significant figures
- Pictograms



2. Jade is planning a weekend break to celebrate her 21st birthday.

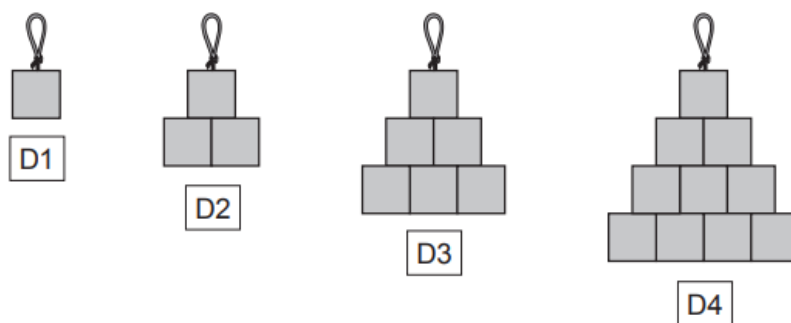
- (iii) Which one of the following formulae could be used to work out the volume of Jade's new suitcase?
 a , b and c are measurements of the 3 dimensions of the suitcase.
 Circle your answer. [1]

$a + b^2 + c$ $2a^2c - 4\pi b^2$ $abc + \pi a^2c$ $a^3 - b^2 + c$ $a + b^3 + c$

3. Ollie and Josef both have jobs in a workshop that makes decorations.

They make decorations using small squares of stained glass.

- (a) Ollie has made the following decorations.



He labels the first decoration D1.
 He labels the next 3 decorations in order, D2, D3 and D4.

He continues to make decorations and labels following this pattern.

- (i) After making decoration D5, Ollie notices he only has 10 small squares of stained glass left.
 How many **more** squares of stained glass will Ollie need to make decoration D6? [2]

.....

.....

.....

.....

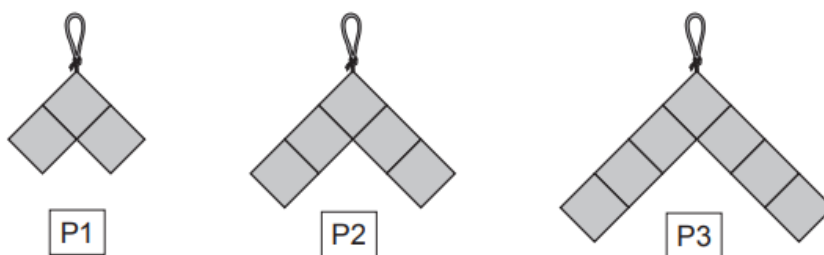
- (ii) Ollie uses a rule to work out how many squares he needs for each decoration. He states that to make decoration D10 he would need 55 squares. Is Ollie correct? You must show your working. [1]

.....

.....

.....

- (b) Josef has made the following three decorations using small squares of stained glass.



Josef labels these patterns P1, P2 and P3 in order.

Josef continues to make decorations following the pattern he has started.

- (i) How many **more** squares would he need to make pattern P22 than to make pattern P18? [1]

.....

.....

.....

(ii) Josef has 22 squares.

Josef states,

'I think I can make one complete decoration using all 22 squares, with none left over.'

Is Josef correct?

Yes

No

Give a reason for your answer.

[1]

(iii) Each small square of stained glass measures 0.5 cm by 0.5 cm.
The perimeter of one of Josef's decorations is 10 cm.
Complete the label that Josef would use for this decoration.

[2]

P

4.



There were 71 532 supporters in the stadium watching the match.
A newspaper headline writes this number of supporters correct to 2 significant figures.
Which of the following numbers should appear in this headline?
Circle your answer.

[1]

72

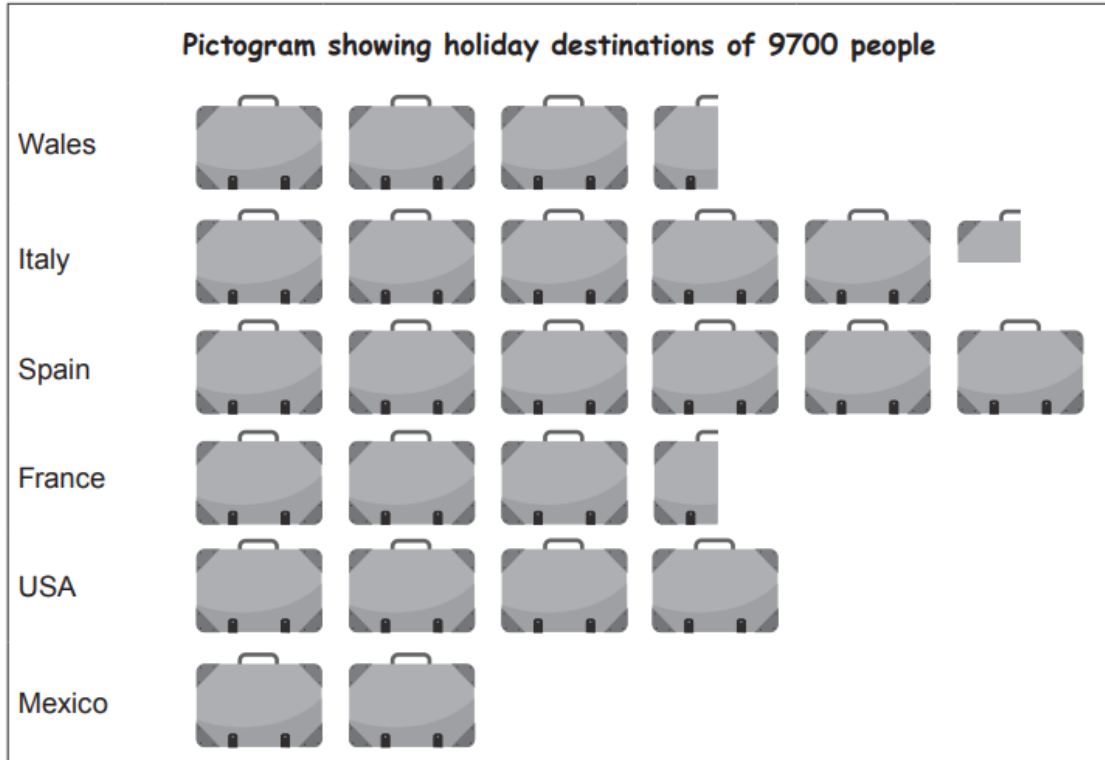
71 000

71 400

71 500

72 000

5. Mena is going on holiday. She hasn't decided where to go yet. In a travel brochure, Mena sees a pictogram showing the holiday destinations of 9700 people.



(a) Complete the key for the pictogram.

[3]



represents people

.....

.....

.....

.....

(b) What is the following ratio in its **simplest form**?

number of people who went to Spain : number of people who went to the USA

Circle your answer.

[1]

6 : 4

4 : 6

400 : 600

3 : 2

2 : 3

.....

.....

(c) Look at the pictogram. The ratio of the number of people who went to Wales to the number of people who went to another country is 2 : 3.
Which country is this? [1]

2 : 3

Wales :

.....

.....

.....