



DEEPENING UNDERSTANDING ANSWER SHEET

YEAR 5 PIM – SQUARE NUMBERS

Fluency 1

A square number is the product of multiplying a number by itself.

Fluency 2

$$2 \times 2 = 4$$

This is 3 squared. $3 \times 3 = 9$

This is 4 squared. $4 \times 4 = 16$

Fluency 3

8^2 does not have the matching answer card of 64.

Fluency 4

$49 - 33 = 16$ so Jerry needs 16 more cubes.

Reasoning 1

Modelled DAB Reasoning Responses

D – The picture card is the odd one out.

A – It is not equal to the other cards.

B – $5 \times 5 = 5^2 = 25$. The picture card represents 24 as there is a square missing from the top row.

Reasoning 2

Modelled DAB Reasoning Response

D – Always



A – Square numbers always have an odd number of factors.

B – Square numbers have pairs of factors and one factor which multiplies by itself. 1 is an unusual number in that it only has 1 factor (itself) but this is still an odd number of factors. 4 has 3 factors – 1, 2 and 4. 9 also has 3 factors – 1, 3 and 9. 16 has 5 factors – 1, 2, 4, 8, 16.

Reasoning 3

Modelled DAB Reasoning Response

D – Jane has not listed the first 12 square numbers correctly.

A – She has made 2 mistakes.

B – Jane has written 1^2 as 2 but 1^2 is 1. She has also written 11^2 as 122 but it should be 121.

Reasoning 4

Modelled DAB Reasoning Response

D – I agree with Ranjit.

A – A square number cannot be a prime number.

B – A prime number has 2 factors – 1 and itself. Square numbers always have an odd number of factors therefore they cannot be prime.

Download our 'DAB' posters to support reasoning in your classroom:

<https://www.deepeningunderstanding.co.uk/product/dab-reasoning-posters/>

Problem Solving 1

Answers could include:

4, 9, 25, 36, 81

Problem Solving 2

Answers could include: 8^2 and 3^2 - 74 slabs

A solution which uses all 75 slabs: 7^2 , 5^2 and 1^2

