SMART EXAM RESOURCES
CAMBRIDGE LOWER SECONDARY
STAGE 7 TOPIC QUESTIONS
MATHS
SQUARE-CUBE-NUMBERS AND THEIR ROOTS
SET-1

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1 Work out.

$$\frac{1+12^2}{2\times 3^2-13}$$

..... [1]

Mark Scheme:

	29	1	Do not accept $\frac{29}{1}$

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2 a and b are positive integers.

$\frac{a}{b}$ = 0.37 correct to 2 significant figures.

b is a cube number less than 200

Find a possible pair of values for a and b.

a = ...

b = ...

[2]

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Mark Scheme:

	$a = 10 \quad b = 27$ **or** $a = 46 \quad b = 125$	**2**	Award 1 mark for answers in these ranges: $2.92 \leq a < 3 \quad b = 8$, **or** $9.855 \leq a < 10.125 \quad b = 27$ **or** $23.36 \leq a < 24 \quad b = 64$ **or** $45.625 \leq a < 46.875 \quad b = 125$ **or** for an answer with: positive integers a and b **and** b is a cube number **and** the decimal equivalent rounds to 0.37 correct to 2sf, e.g. $a = 371 \quad b = 1000$	e.g. common ones are: $a = 2.96 \quad b = 8$ $a = 9.99 \quad b = 27$ $a = 23.68 \quad b = 64$ $a = 46.25 \quad b = 125$

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3 The square of a number is 64

Write down the **two** possible values for the number.

_____ and _____ [1]

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Mark Scheme:

	8 **and** –8 (in either order)	**1**	

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4 ✱ and ● are both positive whole numbers smaller than 20

$$✱^2 - ●^3 = 10^2$$

Work out the value of ✱ and the value of ●

✱ = ...

● = ... [1]

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Mark Scheme:

	15 5	1	

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