2.25-2 Number and Place Value Challenge Set 2: 10-minute Pack

Total Marks

GL ASSESSMENT EP.M35 · Calculators not allowed · about 10 minutes

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

Number and Place Value Challenge Set 2

Revision Library

A second scholarship-level number skills paper for 11+ preparation, made up of entirely fresh questions on place value into the millions and to three decimal places, ordering and rounding, negative numbers, powers and roots, and factors, multiples and primes. Questions are ramped from warm-up recall items to demanding multi-step worded puzzles designed to stretch the strongest candidates.

1 Work out $\sqrt{169} - \sqrt{25}$.

(1)

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2 Round each number to the given number of significant figures.

(a) Round 48,391 to 1 significant figure. **(1)**

(b) Round 0.006284 to 2 significant figures. **(1)**

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3 A baker has 84 cinnamon buns and 108 chocolate muffins. She wants to arrange them onto identical trays so that every tray has the same number of buns and the same number of muffins, with none left over. What is the greatest number of trays she can use?

(2)

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4 Which of these numbers is a prime number?

- ☐ A) 91
- ☐ B) 87
- ☐ C) 79
- ☐ D) 93
- ☐ E) 99

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5 Work out -23 + 9 - (-14).

(2)

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6 Express 504 as a product of its prime factors.

(2)

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7 Greenwood Academy is ordering 312 revision folders at a cost of £3.85 each. By rounding each number to 1 significant figure, estimate the total cost of the order.

(2)

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Mark scheme · 2.25-2 Number and Place Value Challenge Set 2: 10-minute Pack

Question 1

8 cao **B1**

Answer: 8

Question 2

(a) 50,000 cao **B1**

(a) Answer: 50,000

(b) 0.0063 cao **B1**

(b) Answer: 0.0063

Question 3

writes 84 and 108 as products of prime factors ($84 = 2^2 \times 3 \times 7$, $108 = 2^2 \times 3^3$) or lists their factors oe **M1**

12 cao **A1**

Answer: 12 trays

Question 4

C (79) cao **B1**

Answer: C) 79

Question 5

rewrites subtracting a negative as adding: -23 + 9 + 14 oe **M1**

0 cao **A1**

Answer: 0

Question 6

shows a correct factor tree or division ladder with at least three correct prime factors identified oe **M1**

$2^3 \times 3^2 \times 7$ cao (accept 2 x 2 x 2 x 3 x 3 x 7) **A1**

Answer: $2^3 \times 3^2 \times 7$ (= 2 x 2 x 2 x 3 x 3 x 7)

Question 7

rounds both values to 1 significant figure: 312 to 300 and 3.85 to 4 oe **M1**

£1,200 cao, awrt **A1**

Answer: £1,200

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