2.85 Factors, Multiples and Primes Puzzle Set: 10-minute Pack

Total Marks

GL ASSESSMENT GL-11PLUS-MATHS · Calculators not allowed · about 10 minutes

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 Which of these numbers is a prime number?

- ☐ A) 39
- ☐ B) 42
- ☐ C) 43
- ☐ D) 45
- ☐ E) 49

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2 List all the factor pairs of 36.

(2)

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3 Priya thinks of a number less than 100. It is even, has exactly 6 positive factors, and the sum of its digits is 8. What is Priya's number?

(2)

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4 Which of these numbers is a prime number?

- ☐ A) 33
- ☐ B) 51
- ☐ C) 95
- ☐ D) 83
- ☐ E) 121

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5 Work out the highest common factor (HCF) of 84, 126 and 210.

(2)

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6 A number is the product of two consecutive prime numbers and is less than 100. Find all such numbers.

(3)

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Mark scheme · 2.85 Factors, Multiples and Primes Puzzle Set: 10-minute Pack

A correct answer earns full marks unless the question asks for working, a method, proof or explanation.

Question 1

correct option C (43) cao	**B1**

Answer: C) 43

Question 2

some correct factor pairs seen, including 1 x 36 oe	**M1**
all factor pairs listed: 1x36, 2x18, 3x12, 4x9, 6x6 cao	**A1**

Answer: 1 x 36, 2 x 18, 3 x 12, 4 x 9, 6 x 6

Question 3

method to find numbers with 6 factors (form p^2*q with distinct primes, or similar) and check even ones	**M1**
44 cao	**A1**

Answer: 44

Question 4

correct option D (83) cao	**B1**

Answer: D) 83

Question 5

method seen: prime factors or common factor listing ($84=2^2*3*7$, $126=2*3^2*7$, $210=2*3*5*7$)	**M1**
42 cao	**A1**

Answer: 42

Question 6

some consecutive prime products listed (e.g. 2x3, 3x5) seen	**M1**
method continued correctly to consider primes until product ≥ 100	**M1**
full list: 6, 15, 35, 77 cao	**A1**

Answer: 6, 15, 35, 77

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