1.10 Factors, Multiples, Primes and Squares: Test Pack

Calculators not allowed · about 60 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 Write down two factors of 36 that are greater than 6.

(1)

2 Is 41 a prime number? Write Yes or No.

Answer: ___

(1)

3 Which of these numbers is a multiple of 4?

124, 621, 345, 557, 553

Answer: ___

(2)

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4 I am thinking of a 3-digit number. Here are some clues.

Clue 1: It has hundreds digit 3.
Clue 2: It has an even ones digit.
Clue 3: It has a digit sum of 15.
Clue 4: It is a multiple of 12.
Clue 5: It has tens digit twice the ones digit.

What is my number?

Answer: ___

(2)

---

5 What is the smallest number that is a multiple of both 6 and 7?

Answer: ___

(2)

---

6 Write all the prime numbers between 33 and 56.

Answer: ___

(2)

---

7 Is 1 a prime number? Tick yes or no and give a short reason.

- ☐ Yes
- ☐ No

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8 Write all the prime numbers from 8 to 31.

Answer: ___

(2)

---

9 Find all the prime numbers between 20 and 40. Show how you checked them if you need to.

(3)

---

10 Is 121 a prime number? Explain your answer.

(2)

---

11 A teacher asks pupils to write every whole number from 1 to 48 inclusive. Circle the numbers that are multiples of both 3 and 4. How many numbers should be circled? Show how you worked this out.

(3)

---

12 Write all the factors of 52.

Answer: ___

(1)

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13 What is 5 cubed?

Answer: ___

(1)

---

14 Complete the sequence with the next two multiples of 7: 7, 14, 21, 28, ...

(1)

---

15 Write all the multiples of 12 between 157 and 185.

Answer: ___

(1)

---

16 The sum of 3 consecutive odd numbers is 21.

What is the smallest of the 3 numbers?

Answer: ___

(2)

---

17 Circle the two square numbers from this list: 20, 25, 30, 36.

(1)

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18 Write all the factors of 57.

Answer: ___

(2)

---

19 Write all the prime numbers between 48 and 69.

Answer: ___

(2)

---

20 The sum of 4 consecutive odd numbers is 40.

What is the smallest of the 4 numbers?

Answer: ___

(2)

---

21 What is the smallest prime number greater than 50?

(1)

---

22 Which of these numbers is a square number?

49, 125, 120, 31, 94

Answer: ___

(1)

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23 Is 66 a prime number? Write Yes or No.

Answer: ___

(1)

---

24 Is 71 a prime number? Write Yes or No.

Answer: ___

(1)

---

25 Find the highest common factor (HCF) of 24 and 36. Show a method.

(2)

---

26 Write all the common factors of 20 and 15.

Answer: ___

(2)

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27 Write all the prime numbers between 44 and 55.

Answer: ___

(2)

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28 What is the smallest number that is a multiple of both 8 and 5?

Answer: ___

(2)

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Mark scheme · 1.10 Factors, Multiples, Primes and Squares: Test Pack

Question 1

Any two correct factors greater than 6, for example 9 and 12 cao — **B1**

Answer: **9, 12**

Question 2

Yes cao — **B1**

Answer: **Yes**

Question 3

uses a divisibility rule or division — **M1**

124 cao — **A1**

Answer: **124**

Question 4

uses at least two conditions to cut down the list — **M1**

384 cao — **A1**

Answer: **384**

Question 5

lists multiples of 6 and 7 — **M1**

42 cao — **A1**

Answer: **42**

Question 6

checks factors of numbers in the range — **M1**

37, 41, 43, 47, 53 cao — **A1**

Answer: **37, 41, 43, 47, 53**

Question 7

No and reason that 1 has only one factor so it is not prime cao — **B1**

Answer: **No. 1 is not prime because it has only one factor (1) not two.**

Question 8

checks factors of numbers in the range — **M1**

11, 13, 17, 19, 23, 29, 31 cao — **A1**

Answer: **11, 13, 17, 19, 23, 29, 31**

Question 9

Method shown to check divisibility or explain elimination of composites — **M1**

All primes correctly listed: 23, 29, 31, 37 cao — **B2**

Answer: **23, 29, 31, 37**

Question 10

Show that 121 = 11 x 11 or state a factorisation — **B1**

Conclude that 121 is not prime cao — **B1**

Answer: **No. 121 = 11 x 11 so it is not prime.**

Question 11

Method shown to find numbers that are multiples of both 3 and 4, e.g. recognise LCM = 12 or show listing — **M1**

List of multiples: 12, 24, 36, 48 oe — **B1**

Correct count 4 cao — **B1**

Answer: **12, 24, 36, 48; 4**

Question 12

1, 2, 4, 13, 26, 52 cao — **B1**

Answer: **1, 2, 4, 13, 26, 52**

Question 13

125 cao — **B1**

Answer: **125**

Question 14

Next two multiples 35 and 42 cao — **B1**

Answer: **35, 42**

Question 15

168, 180 cao — **B1**

Answer: **168, 180**

Question 16

uses the mean or tests numbers — **M1**

5 cao — **A1**

Answer: **5**

Question 17

25 and 36 circled cao — **B1**

Answer: **25, 36**

Question 18

at least half the factors found — **M1**

1, 3, 19, 57 cao — **A1**

Answer: **1, 3, 19, 57**

Question 19

checks factors of numbers in the range — **M1**

53, 59, 61, 67 cao — **A1**

Answer: **53, 59, 61, 67**

Question 20

uses the mean or tests numbers — **M1**

7 cao — **A1**

Answer: **7**

Question 21

53 cao — **B1**

Answer: **53**

Question 22

49 cao — **B1**

Answer: **49**

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Question 23

No cao	**B1**

Answer: **No**

Question 24

Yes cao	**B1**

Answer: **Yes**

Question 25

Correct method shown, e.g. listing common factors or prime factor method	**M1**
HCF = 12 cao	**B1**

Answer: **12**

Question 26

lists the factors of each number	**M1**
1, 5 cao	**A1**

Answer: **1, 5**

Question 27

checks factors of numbers in the range	**M1**
47, 53 cao	**A1**

Answer: **47, 53**

Question 28

lists multiples of 8 and 5	**M1**
40 cao	**A1**

Answer: **40**

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