1.1 Number: Integers and Powers: 1-hour Pack

Calculator allowed · about 60 minutes

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 Which is greater, 4^3 or 10^2? You must show your working.

(2)

2 Which is greater, 2^5 or 12^3? You must show your working.

(2)

3 Write down all the factors of 70.

(2)

4 Which is greater, 3^5 or 10^3? You must show your working.

(2)

5 Work out 7 x 9 - 9 x 9.

(3)

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6 Work out 13 + 4.

(1)

7 Work out $9^2 - 3^4$.

(2)

8 Work out 504 x 42.

(3)

9 Work out the value of each power.

(a) 5^2 **(1)**

(b) 3^3 **(1)**

(c) 2^5 **(1)**

10 Write down the value of $\sqrt{121}$.

(1)

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11 Work out $5^3 + 2^2$.

(2)

12 Work out $8^2 + 6^2$.

(2)

13 Write $(9^6 \times 9^5) \div 9^6$ as a single power of 9.

(2)

14 Work out 5 x 6 - 7 x 9.

(3)

15 Work out 2 + 8.

(1)

16 Which is greater, 3^3 or 11^3? You must show your working.

(2)

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17 Write down the value of 14^2.

(1)

18 Work out $5^4 + 5^3$.

(2)

19 Which is greater, 2^5 or 11^3? You must show your working.

(2)

20 Write down the value of 9^2.

(1)

21 Work out -14 - 11 + (-7).

(2)

22 Write down the value of 4^3.

(1)

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23 Work out 78 x 28.

(3)

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24 Write $(3^5)^3$ as a single power of 3.

(1)

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25 Write $2^5 \times 2^7$ as a single power of 2.

(1)

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Mark scheme · 1.1 Number: Integers and Powers: 1-hour Pack

Question 1

$4^3 = 64$ and $10^2 = 100$ **M1**

10^2 cao **A1**

Answer: **10^2**

Question 2

$2^5 = 32$ and $12^3 = 1728$ **M1**

12^3 cao **A1**

Answer: **12^3**

Question 3

at least half of the factors correct, with no more than one incorrect value **M1**

1, 2, 5, 7, 10, 14, 35, 70 cao **A1**

Answer: **1, 2, 5, 7, 10, 14, 35, 70**

Question 4

$3^5 = 243$ and $10^3 = 1000$ **M1**

10^3 cao **A1**

Answer: **10^3**

Question 5

correct first operation applied by the order of operations (brackets, indices, then x and ÷) **M1**

second correct stage of working **M1**

-18 cao **A1**

Answer: **-18**

Question 6

17 cao **B1**

Answer: **17**

Question 7

$9^2 = 81$ or $3^4 = 81$ found **M1**

0 cao **A1**

Answer: **0**

Question 8

one correct partial product, eg 504 x 2 = 1008 or 504 x 40 = 20160 **M1**

both partial products attempted and added **M1**

21168 cao **A1**

Answer: **21168**

Question 9

(a) 25 cao **B1**

(a) Answer: **25**

(b) 27 cao **B1**

(b) Answer: **27**

(c) 32 cao **B1**

(c) Answer: **32**

Question 10

11 cao **B1**

Answer: **11**

Question 11

$5^3 = 125$ or $2^2 = 4$ found **M1**

129 cao **A1**

Answer: **129**

Question 12

$8^2 = 64$ or $6^2 = 36$ found **M1**

100 cao **A1**

Answer: **100**

Question 13

uses the laws of indices correctly for one stage **M1**

9^5 cao **A1**

Answer: **9^5**

Question 14

correct first operation applied by the order of operations (brackets, indices, then x and ÷) **M1**

second correct stage of working **M1**

-33 cao **A1**

Answer: **-33**

Question 15

10 cao **B1**

Answer: **10**

Question 16

$3^3 = 27$ and $11^3 = 1331$ **M1**

11^3 cao **A1**

Answer: **11^3**

Question 17

196 cao **B1**

Answer: **196**

Question 18

$5^4 = 625$ or $5^3 = 125$ found **M1**

750 cao **A1**

Answer: **750**

Question 19

$2^5 = 32$ and $11^3 = 1331$ **M1**

11^3 cao **A1**

Answer: **11^3**

Question 20

81 cao **B1**

Answer: **81**

Question 21

-14 - 11 evaluated correctly (-25) or equivalent **M1**

-32 cao **A1**

Answer: **-32**

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Question 22

64 cao	**B1**

Answer: **64**

Question 23

one correct partial product, eg 78 x 8 = 624 or 78 x 20 = 1560	**M1**
both partial products attempted and added	**M1**
2184 cao	**A1**

Answer: **2184**

Question 24

3^{15} cao	**B1**

Answer: **3^{15}**

Question 25

2^{12} cao	**B1**

Answer: **2^{12}**

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