2.87 Divisibility Rules and Number Property Puzzles: 30-minute Pack

Total Marks

GL ASSESSMENT GL-11PLUS-MATHS · Calculators not allowed · about 30 minutes

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 Which of these numbers is divisible by 8?

- ☐ A) 1235
- ☐ B) 1232
- ☐ C) 1237
- ☐ D) 1239
- ☐ E) 1243

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2 Which of these numbers is divisible by 30?

- ☐ A) 1230
- ☐ B) 225
- ☐ C) 504
- ☐ D) 492
- ☐ E) 850

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3 The number 43*3 is divisible by 11, where * stands for one digit. What is the digit?

- ☐ A) 2
- ☐ B) 3
- ☐ C) 8
- ☐ D) 4
- ☐ E) 0

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4 Which of these numbers is divisible by 6?

- [ ] A) 932
- [ ] B) 658
- [ ] C) 48
- [ ] D) 393
- [ ] E) 531

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5 The number 111*3 is divisible by 11, where * stands for one digit. What is the digit?

- [ ] A) 2
- [ ] B) 6
- [ ] C) 0
- [ ] D) 8
- [ ] E) 4

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6 The number 71*25 is divisible by 9, where * stands for one digit. What is the digit?

- [ ] A) 7
- [ ] B) 4
- [ ] C) 2
- [ ] D) 3
- [ ] E) 0

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7 Which of these numbers is divisible by 6?

- [ ] A) 652
- [ ] B) 108
- [ ] C) 496
- [ ] D) 45
- [ ] E) 927

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8 The number 5582* is divisible by 9, where * stands for one digit. What is the digit?

- [ ] A) 6
- [ ] B) 0
- [ ] C) 3
- [ ] D) 8
- [ ] E) 7

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9 The number 164*6 is divisible by 9, where * stands for one digit. What is the digit?

- [ ] A) 8
- [ ] B) 2
- [ ] C) 7
- [ ] D) 1
- [ ] E) 6

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10 Which of these numbers is divisible by 18?

- [ ] A) 780
- [ ] B) 801
- [ ] C) 432
- [ ] D) 760
- [ ] E) 927

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11 Which of these numbers is divisible by 30?

- [ ] A) 905
- [ ] B) 680
- [ ] C) 414
- [ ] D) 540
- [ ] E) 696

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12 The number 9*5 is divisible by 11, where * stands for one digit. What is the digit?

- [ ] A) 3
- [ ] B) 5
- [ ] C) 6
- [ ] D) 9
- [ ] E) 4

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13 Which of these numbers is divisible by 20?

- [ ] A) 530
- [ ] B) 288
- [ ] C) 420
- [ ] D) 284
- [ ] E) 965

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14 The number 7*537 is divisible by 9, where * stands for one digit. What is the digit?

- [ ] A) 0
- [ ] B) 5
- [ ] C) 2
- [ ] D) 7
- [ ] E) 4

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15 Which of these numbers is divisible by 12?

- [ ] A) 318
- [ ] B) 808
- [ ] C) 435
- [ ] D) 896
- [ ] E) 192

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16 The number 3*673 is divisible by 11, where * stands for one digit. What is the digit?

- [ ] A) 5
- [ ] B) 7
- [ ] C) 6
- [ ] D) 4
- [ ] E) 8

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17 Which of these numbers is divisible by 15?

- [ ] A) 805
- [ ] B) 625
- [ ] C) 612
- [ ] D) 366
- [ ] E) 60

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18 Which of these numbers is divisible by 20?

- [ ] A) 505
- [ ] B) 832
- [ ] C) 580
- [ ] D) 135
- [ ] E) 412

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19 The number 4*8 is divisible by 9, where * stands for one digit. What is the digit?

- [ ] A) 3
- [ ] B) 6
- [ ] C) 7
- [ ] D) 4
- [ ] E) 9

---

20 The number 84*76 is divisible by 11, where * stands for one digit. What is the digit?

- [ ] A) 5
- [ ] B) 0
- [ ] C) 8
- [ ] D) 4
- [ ] E) 7

---

21 Which of these numbers is divisible by 12?

- [ ] A) 879
- [ ] B) 468
- [ ] C) 741
- [ ] D) 668
- [ ] E) 928

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22 The number 4*75 is divisible by 11, where * stands for one digit. What is the digit?

- [ ] A) 0
- [ ] B) 4
- [ ] C) 7
- [ ] D) 6
- [ ] E) 2

---

23 The number 8398* is divisible by 11, where * stands for one digit. What is the digit?

- [ ] A) 7
- [ ] B) 2
- [ ] C) 5
- [ ] D) 6
- [ ] E) 9

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24 Which of these numbers is divisible by 20?

- [ ] A) 875
- [ ] B) 772
- [ ] C) 770
- [ ] D) 852
- [ ] E) 220

---

25 The number 472* is divisible by 9, where * stands for one digit. What is the digit?

- [ ] A) 2
- [ ] B) 5
- [ ] C) 1
- [ ] D) 4
- [ ] E) 0

---

26 Which of these numbers is divisible by 24?

- [ ] A) 1320
- [ ] B) 656
- [ ] C) 579
- [ ] D) 522
- [ ] E) 824

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27 The number 8*6 is divisible by 9, where * stands for one digit. What is the digit?

- [ ] A) 1
- [ ] B) 7
- [ ] C) 3
- [ ] D) 4
- [ ] E) 6

---

28 Which of these numbers is divisible by 18?

- [ ] A) 693
- [ ] B) 698
- [ ] C) 756
- [ ] D) 909
- [ ] E) 528

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29 Which of these numbers is divisible by 12?

- ☐ A) 932
- ☐ B) 417
- ☐ C) 332
- ☐ D) 420
- ☐ E) 147

---

30 Find the smallest number greater than 70 that ends with digit 1 and is divisible by 7.

(1)

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31 Find the largest integer less than 100 that has exactly the three distinct prime factors 2, 3 and 5 (so the number is of the form $2^a * 3^b * 5^c$ with a,b,c ≥ 1).

(2)

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Mark scheme · 2.87 Divisibility Rules and Number Property Puzzles: 30-minute Pack

Question 1

correct option B (1232) cao **B1**

Answer: B) 1232 (last three digits 232, and 232 ÷ 8 = 29).

Question 2

correct option A (1230) cao **B1**

Answer: A) 1230

Question 3

correct option A (2) cao **B1**

Answer: A) 2

Question 4

correct option C (48) cao **B1**

Answer: C) 48

Question 5

correct option E (4) cao **B1**

Answer: E) 4

Question 6

correct option D (3) cao **B1**

Answer: D) 3

Question 7

correct option B (108) cao **B1**

Answer: B) 108

Question 8

correct option E (7) cao **B1**

Answer: E) 7

Question 9

correct option D (1) cao **B1**

Answer: D) 1

Question 10

correct option C (432) cao **B1**

Answer: C) 432

Question 11

correct option D (540) cao **B1**

Answer: D) 540

Question 12

correct option A (3) cao **B1**

Answer: A) 3

Question 13

correct option C (420) cao **B1**

Answer: C) 420

Question 14

correct option B (5) cao **B1**

Answer: B) 5

Question 15

correct option E (192) cao **B1**

Answer: E) 192

Question 16

correct option A (5) cao **B1**

Answer: A) 5

Question 17

correct option E (60) cao **B1**

Answer: E) 60

Question 18

correct option C (580) cao **B1**

Answer: C) 580

Question 19

correct option B (6) cao **B1**

Answer: B) 6

Question 20

correct option C (8) cao **B1**

Answer: C) 8

Question 21

correct option B (468) cao **B1**

Answer: B) 468

Question 22

correct option D (6) cao **B1**

Answer: D) 6

Question 23

correct option C (5) cao **B1**

Answer: C) 5

Question 24

correct option E (220) cao **B1**

Answer: E) 220

Question 25

correct option B (5) cao **B1**

Answer: B) 5

Question 26

correct option A (1320) cao **B1**

Answer: A) 1320

Question 27

correct option D (4) cao **B1**

Answer: D) 4

Question 28

correct option C (756) cao **B1**

Answer: C) 756

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Question 29

correct option D (420) cao **B1**

Answer: D) 420

Question 30

91 cao **B1**

Answer: 91

Question 31

Consider multiples of 2*3*5 = 30 and multiply by powers until < 100 **M1**

90 cao **A1**

Answer: 90

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