2.25 Number and Place Value Challenge: 30-minute Pack

Total Marks

GL ASSESSMENT EP.M25 · Calculators not allowed · about 30 minutes

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

Number and Place Value Challenge

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A scholarship-level number skills paper for 11+ preparation. It covers place value into the millions and decimals, negative numbers, rounding and estimation, factors, multiples and primes, powers and roots, and the correct order of operations. Questions are ramped from warm-up recall items to demanding multi-step problems designed to stretch the strongest candidates.

1 Using each of the digit cards 6, 1, 8, 0 once, what is the difference between the largest and smallest 4-digit numbers that can be made?

- ☐ A) 7,541
- ☐ B) 8,442
- ☐ C) 9,678
- ☐ D) 7,542
- ☐ E) 7,543

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2 Using each of the digit cards 9, 5, 2, 0, 3 once, what is the smallest odd 5-digit number that can be made?

- ☐ A) 20,359
- ☐ B) 2,359
- ☐ C) 20,360
- ☐ D) 20,395
- ☐ E) 95,320

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3 Using each of the digit cards 7, 5, 2, 8 once, what is the largest even 4-digit number that can be made?

- ☐ A) 8,751
- ☐ B) 8,753
- ☐ C) 8,752
- ☐ D) 8,572
- ☐ E) 2,578

---

4 Using each of the digit cards 0, 1, 6, 8 once, what is the largest even 4-digit number that can be made?

- ☐ A) 8,611
- ☐ B) 8,610
- ☐ C) 8,160
- ☐ D) 8,609
- ☐ E) 1,068

---

5 Using each of the digit cards 9, 6, 2, 7 once, what is the smallest odd 4-digit number that can be made?

- ☐ A) 9,762
- ☐ B) 2,697
- ☐ C) 2,678
- ☐ D) 2,679
- ☐ E) 2,680

---

6 Using each of the digit cards 9, 3, 7, 0 once, what is the smallest odd 4-digit number that can be made?

- ☐ A) 3,080
- ☐ B) 9,730
- ☐ C) 3,097
- ☐ D) 379
- ☐ E) 3,079

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7 Using each of the digit cards 6, 0, 8, 5 once, what is the largest even 4-digit number that can be made?

- ☐ A) 8,649
- ☐ B) 5,068
- ☐ C) 8,650
- ☐ D) 8,560
- ☐ E) 8,651

---

8 Using each of the digit cards 1, 7, 8, 6 once, what is the largest even 4-digit number that can be made?

- ☐ A) 1,678
- ☐ B) 8,761
- ☐ C) 8,716
- ☐ D) 8,715
- ☐ E) 8,717

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9 Using each of the digit cards 1, 8, 3, 2 once, what is the largest even 4-digit number that can be made?

- ☐ A) 8,321
- ☐ B) 8,311
- ☐ C) 1,238
- ☐ D) 8,132
- ☐ E) 8,312

---

10 Using each of the digit cards 7, 1, 8, 4, 5 once, what is the smallest odd 5-digit number that can be made?

- ☐ A) 14,588
- ☐ B) 14,785
- ☐ C) 14,578
- ☐ D) 14,587
- ☐ E) 87,541

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11 Using each of the digit cards 9, 2, 1, 5 once, what is the largest even 4-digit number that can be made?

- ☐ A) 9,512
- ☐ B) 9,152
- ☐ C) 1,259
- ☐ D) 9,521
- ☐ E) 9,511

---

12 Using each of the digit cards 3, 2, 7, 1 once, what is the difference between the largest and smallest 4-digit numbers that can be made?

- ☐ A) 6,075
- ☐ B) 6,084
- ☐ C) 6,085
- ☐ D) 8,558
- ☐ E) 7,321

---

13 Using each of the digit cards 0, 5, 3, 2 once, what is the difference between the largest and smallest 4-digit numbers that can be made?

- ☐ A) 5,085
- ☐ B) 5,320
- ☐ C) 3,285
- ☐ D) 3,286
- ☐ E) 7,355

---

14 Using each of the digit cards 8, 5, 6, 1 once, what is the largest even 4-digit number that can be made?

- ☐ A) 1,568
- ☐ B) 8,156
- ☐ C) 8,517
- ☐ D) 8,651
- ☐ E) 8,516

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15 Using each of the digit cards 7, 3, 4, 6 once, what is the difference between the largest and smallest 4-digit numbers that can be made?

- [ ] A) 4,175
- [ ] B) 11,110
- [ ] C) 4,177
- [ ] D) 4,176
- [ ] E) 4,167

---

16 Using each of the digit cards 5, 4, 3, 0, 7 once, what is the difference between the largest and smallest 5-digit numbers that can be made?

- [ ] A) 44,973
- [ ] B) 71,973
- [ ] C) 105,887
- [ ] D) 75,430
- [ ] E) 44,964

---

17 Using each of the digit cards 6, 0, 4, 3 once, what is the largest even 4-digit number that can be made?

- [ ] A) 6,430
- [ ] B) 6,429
- [ ] C) 3,046
- [ ] D) 6,431
- [ ] E) 6,340

---

18 Work out 4 + 2 x 3.

- [ ] A) 18
- [ ] B) 10
- [ ] C) 9
- [ ] D) 11
- [ ] E) 24

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19 Using each of the digit cards 3, 5, 2, 6 once, what is the difference between the largest and smallest 4-digit numbers that can be made?

- ☐ A) 4,167
- ☐ B) 4,175
- ☐ C) 4,176
- ☐ D) 6,532
- ☐ E) 8,888

---

20 Using each of the digit cards 7, 8, 1, 2 once, what is the difference between the largest and smallest 4-digit numbers that can be made?

- ☐ A) 7,444
- ☐ B) 7,434
- ☐ C) 7,443
- ☐ D) 7,442
- ☐ E) 9,999

---

21 Work out -15 + 8 - (-6).

(2)

---

22 Write the number 'six million, forty thousand and seventeen' in figures.

(1)

---

23 Order these numbers from smallest to largest: 2.305, 2.35, 2.053, 2.5

(2)

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24 Round 428,650 to the nearest thousand.

(1)

---

25 A number of chairs, n, can be arranged into rows of exactly 9 or rows of exactly 12, with none left over either way. If there are more than 100 but fewer than 140 chairs, how many chairs are there?

(3)

---

26 Which of these is equivalent to $2^4 \times 2^3$?

- ☐ A) 2^7
- ☐ B) 2^{12}
- ☐ C) 4^7
- ☐ D) 2^1
- ☐ E) 4^{12}

---

27 Between which two consecutive whole numbers does $\sqrt{90}$ lie?

(2)

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Mark scheme · 2.25 Number and Place Value Challenge: 30-minute Pack

Question 1

correct option D (7,542) cao **B1**

Answer: D) 7,542

Question 2

correct option A (20,359) cao **B1**

Answer: A) 20,359

Question 3

correct option C (8,752) cao **B1**

Answer: C) 8,752

Question 4

correct option B (8,610) cao **B1**

Answer: B) 8,610

Question 5

correct option D (2,679) cao **B1**

Answer: D) 2,679

Question 6

correct option E (3,079) cao **B1**

Answer: E) 3,079

Question 7

correct option C (8,650) cao **B1**

Answer: C) 8,650

Question 8

correct option C (8,716) cao **B1**

Answer: C) 8,716

Question 9

correct option E (8,312) cao **B1**

Answer: E) 8,312

Question 10

correct option D (14,587) cao **B1**

Answer: D) 14,587

Question 11

correct option A (9,512) cao **B1**

Answer: A) 9,512

Question 12

correct option B (6,084) cao **B1**

Answer: B) 6,084

Question 13

correct option C (3,285) cao **B1**

Answer: C) 3,285

Question 14

correct option E (8,516) cao **B1**

Answer: E) 8,516

Question 15

correct option D (4,176) cao **B1**

Answer: D) 4,176

Question 16

correct option A (44,973) cao **B1**

Answer: A) 44,973

Question 17

correct option A (6,430) cao **B1**

Answer: A) 6,430

Question 18

B (10) cao **B1**

Answer: B) 10

Question 19

correct option C (4,176) cao **B1**

Answer: C) 4,176

Question 20

correct option C (7,443) cao **B1**

Answer: C) 7,443

Question 21

rewrites subtracting a negative as adding: -15 + 8 + 6 oe **M1**

-1 cao **A1**

Answer: -1

Question 22

6,040,017 cao **B1**

Answer: 6,040,017

Question 23

correctly aligns place values (e.g. writes each number to 3 decimal places) and identifies the correct smallest (2.053) and largest (2.5) oe **M1**

fully correct order: 2.053, 2.305, 2.35, 2.5 cao, ft from a partially correct list **A1**

Answer: 2.053, 2.305, 2.35, 2.5

Question 24

429,000 cao **B1**

Answer: 429,000

Question 25

recognises that n must be a common multiple of 9 and 12, and finds their LCM = 36 oe **M1**

dependent on the previous mark: lists multiples of 36 (36, 72, 108, 144) and tests them against the range 100 to 140 **dM1**

108 cao **A1**

Answer: 108

Question 26

A (2^7) cao **B1**

Answer: A) 2^7

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Question 27

identifies the square numbers either side, 81 and 100, oe **M1**

9 and 10 cao **A1**

Answer: Between 9 and 10

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