2.15 Logic and Puzzle Problems: 1-hour Pack

GL ASSESSMENT GL11-MATHS-LOGIC · Calculators not allowed · about 60 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 Five children are different heights. Ravi is shorter than Tom. Megan is shorter than Ravi. Megan is taller than Aisha. Dylan is shorter than Aisha. Who is the tallest?

- ☐ A) Tom
- ☐ B) Dylan
- ☐ C) Megan
- ☐ D) Ravi
- ☐ E) Aisha

---

2 Five children are different heights. Aisha is taller than Megan. Fatima is shorter than Jack. Aisha is shorter than Fatima. Jack is shorter than Mei. Who is the second tallest?

- ☐ A) Megan
- ☐ B) Jack
- ☐ C) Aisha
- ☐ D) Mei
- ☐ E) Fatima

---

3 Five children are different heights. Callum is taller than Mei. Sienna is taller than Priya. Callum is shorter than Priya. Sienna is shorter than Ravi. Who is the tallest?

- ☐ A) Ravi
- ☐ B) Sienna
- ☐ C) Priya
- ☐ D) Mei
- ☐ E) Callum

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4 Five children are different heights. Mei is shorter than Jack. Priya is shorter than Mei. Ravi is taller than Dylan. Ravi is shorter than Priya. Who is the tallest?

- [ ] A) Ravi
- [ ] B) Mei
- [ ] C) Jack
- [ ] D) Priya
- [ ] E) Dylan

---

5 Five children are different heights. Mei is shorter than Priya. Sienna is taller than Priya. Mei is taller than Tom. Aisha is shorter than Tom. Who is the second tallest?

- [ ] A) Mei
- [ ] B) Aisha
- [ ] C) Tom
- [ ] D) Sienna
- [ ] E) Priya

---

6 Five children are different heights. Megan is taller than Sienna. Callum is taller than Megan. Fatima is shorter than Mei. Fatima is taller than Callum. Who is the second tallest?

- [ ] A) Callum
- [ ] B) Mei
- [ ] C) Sienna
- [ ] D) Fatima
- [ ] E) Megan

---

7 Five children are different heights. Oliver is taller than Megan. Dylan is taller than Sienna. Sienna is taller than Tom. Tom is taller than Oliver. Who is the tallest?

- [ ] A) Dylan
- [ ] B) Tom
- [ ] C) Oliver
- [ ] D) Megan
- [ ] E) Sienna

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8 Five children are different heights. Tom is shorter than Fatima. Fatima is shorter than Jack. Megan is taller than Oliver. Jack is shorter than Oliver. Who is the tallest?

- ☐ A) Fatima
- ☐ B) Jack
- ☐ C) Oliver
- ☐ D) Tom
- ☐ E) Megan

---

9 Five children are different heights. Oliver is taller than Priya. Tom is shorter than Fatima. Oliver is shorter than Ravi. Fatima is shorter than Priya. Who is the second tallest?

- ☐ A) Ravi
- ☐ B) Tom
- ☐ C) Oliver
- ☐ D) Fatima
- ☐ E) Priya

---

10 Five children are different heights. Ravi is shorter than Sienna. Mei is taller than Tom. Mei is shorter than Ravi. Sienna is shorter than Aisha. Who is the second tallest?

- ☐ A) Tom
- ☐ B) Mei
- ☐ C) Ravi
- ☐ D) Sienna
- ☐ E) Aisha

---

11 Five children are different heights. Sienna is taller than Jack. Megan is taller than Callum. Sienna is shorter than Callum. Megan is shorter than Fatima. Who is the second tallest?

- ☐ A) Callum
- ☐ B) Megan
- ☐ C) Sienna
- ☐ D) Jack
- ☐ E) Fatima

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12 Five children are different heights. Jack is shorter than Ravi. Megan is shorter than Fatima. Oliver is taller than Fatima. Jack is taller than Oliver. Who is the second tallest?

- [ ] A) Jack
- [ ] B) Fatima
- [ ] C) Oliver
- [ ] D) Ravi
- [ ] E) Megan

---

13 Five children are different heights. Dylan is taller than Ravi. Megan is taller than Dylan. Megan is shorter than Mei. Tom is shorter than Ravi. Who is the shortest?

- [ ] A) Mei
- [ ] B) Tom
- [ ] C) Dylan
- [ ] D) Ravi
- [ ] E) Megan

---

14 Five children are different heights. Jack is shorter than Sienna. Aisha is taller than Fatima. Sienna is shorter than Oliver. Oliver is shorter than Fatima. Who is in the middle (third tallest)?

- [ ] A) Fatima
- [ ] B) Aisha
- [ ] C) Oliver
- [ ] D) Jack
- [ ] E) Sienna

---

15 Five children are different heights. Ravi is taller than Sienna. Jack is shorter than Oliver. Sienna is taller than Callum. Ravi is shorter than Jack. Who is the second tallest?

- [ ] A) Ravi
- [ ] B) Oliver
- [ ] C) Sienna
- [ ] D) Jack
- [ ] E) Callum

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16 Five children are different heights. Ravi is taller than Sienna. Sienna is taller than Jack. Jack is taller than Callum. Callum is taller than Tom. Who is the tallest?

- [ ] A) Tom
- [ ] B) Sienna
- [ ] C) Jack
- [ ] D) Callum
- [ ] E) Ravi

---

17 Five children are different heights. Ravi is shorter than Megan. Megan is shorter than Jack. Jack is shorter than Callum. Tom is shorter than Ravi. Who is the tallest?

- [ ] A) Callum
- [ ] B) Tom
- [ ] C) Jack
- [ ] D) Megan
- [ ] E) Ravi

---

18 Five children are different heights. Jack is taller than Sienna. Sienna is taller than Callum. Tom is taller than Priya. Jack is shorter than Priya. Who is the second tallest?

- [ ] A) Callum
- [ ] B) Priya
- [ ] C) Jack
- [ ] D) Tom
- [ ] E) Sienna

---

19 Five children are different heights. Dylan is shorter than Aisha. Dylan is taller than Megan. Sienna is shorter than Callum. Sienna is taller than Aisha. Who is the second tallest?

- [ ] A) Callum
- [ ] B) Dylan
- [ ] C) Aisha
- [ ] D) Sienna
- [ ] E) Megan

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20 Five children are different heights. Tom is taller than Fatima. Callum is taller than Oliver. Fatima is taller than Ravi. Callum is shorter than Ravi. Who is in the middle (third tallest)?

- [ ] A) Tom
- [ ] B) Fatima
- [ ] C) Oliver
- [ ] D) Callum
- [ ] E) Ravi

---

21 Five children are different heights. Jack is taller than Dylan. Dylan is taller than Aisha. Aisha is taller than Fatima. Priya is taller than Jack. Who is the tallest?

- [ ] A) Fatima
- [ ] B) Dylan
- [ ] C) Priya
- [ ] D) Aisha
- [ ] E) Jack

---

22 Five children are different heights. Dylan is taller than Mei. Tom is taller than Dylan. Sienna is taller than Jack. Tom is shorter than Jack. Who is the shortest?

- [ ] A) Jack
- [ ] B) Dylan
- [ ] C) Sienna
- [ ] D) Tom
- [ ] E) Mei

---

23 Five children are different heights. Aisha is taller than Tom. Tom is taller than Sienna. Sienna is taller than Dylan. Aisha is shorter than Mei. Who is in the middle (third tallest)?

- [ ] A) Sienna
- [ ] B) Dylan
- [ ] C) Aisha
- [ ] D) Tom
- [ ] E) Mei

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24 Five children are different heights. Aisha is shorter than Mei. Aisha is taller than Tom. Jack is taller than Priya. Jack is shorter than Tom. Who is the shortest?

- [ ] A) Mei
- [ ] B) Priya
- [ ] C) Tom
- [ ] D) Aisha
- [ ] E) Jack

---

25 Five children are different heights. Oliver is shorter than Aisha. Megan is shorter than Fatima. Dylan is taller than Fatima. Dylan is shorter than Oliver. Who is in the middle (third tallest)?

- [ ] A) Dylan
- [ ] B) Aisha
- [ ] C) Oliver
- [ ] D) Megan
- [ ] E) Fatima

---

26 Five children are different heights. Oliver is taller than Ravi. Oliver is shorter than Mei. Sienna is taller than Aisha. Sienna is shorter than Ravi. Who is the tallest?

- [ ] A) Aisha
- [ ] B) Sienna
- [ ] C) Mei
- [ ] D) Ravi
- [ ] E) Oliver

---

27 Five children are different heights. Mei is taller than Ravi. Oliver is taller than Callum. Ravi is taller than Dylan. Dylan is taller than Oliver. Who is the second tallest?

- [ ] A) Oliver
- [ ] B) Callum
- [ ] C) Mei
- [ ] D) Ravi
- [ ] E) Dylan

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28 Five children are different heights. Megan is shorter than Mei. Megan is taller than Priya. Priya is taller than Sienna. Fatima is taller than Mei. Who is the second tallest?

- [ ] A) Megan
- [ ] B) Fatima
- [ ] C) Mei
- [ ] D) Priya
- [ ] E) Sienna

---

29 Five children are different heights. Tom is shorter than Oliver. Megan is taller than Oliver. Ravi is shorter than Tom. Megan is shorter than Priya. Who is in the middle (third tallest)?

- [ ] A) Oliver
- [ ] B) Priya
- [ ] C) Tom
- [ ] D) Ravi
- [ ] E) Megan

---

30 Five children are different heights. Ravi is taller than Megan. Ravi is shorter than Oliver. Dylan is shorter than Fatima. Dylan is taller than Oliver. Who is in the middle (third tallest)?

- [ ] A) Ravi
- [ ] B) Oliver
- [ ] C) Dylan
- [ ] D) Megan
- [ ] E) Fatima

---

31 Five children are different heights. Dylan is taller than Aisha. Aisha is taller than Sienna. Tom is taller than Dylan. Sienna is taller than Ravi. Who is the second tallest?

- [ ] A) Tom
- [ ] B) Sienna
- [ ] C) Aisha
- [ ] D) Ravi
- [ ] E) Dylan

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32 Five children are different heights. Ravi is taller than Fatima. Tom is taller than Sienna. Fatima is taller than Priya. Sienna is taller than Ravi. Who is the second tallest?

- ☐ A) Fatima
- ☐ B) Ravi
- ☐ C) Sienna
- ☐ D) Tom
- ☐ E) Priya

---

33 Five children are different heights. Sienna is shorter than Priya. Sienna is taller than Megan. Ravi is taller than Priya. Jack is shorter than Megan. Who is the shortest?

- ☐ A) Megan
- ☐ B) Ravi
- ☐ C) Sienna
- ☐ D) Jack
- ☐ E) Priya

---

34 Five children are different heights. Ravi is shorter than Megan. Oliver is taller than Megan. Mei is shorter than Jack. Mei is taller than Oliver. Who is in the middle (third tallest)?

- ☐ A) Ravi
- ☐ B) Oliver
- ☐ C) Mei
- ☐ D) Megan
- ☐ E) Jack

---

35 Five children are different heights. Priya is taller than Aisha. Sienna is taller than Tom. Sienna is shorter than Aisha. Callum is shorter than Tom. Who is the second tallest?

- ☐ A) Priya
- ☐ B) Sienna
- ☐ C) Tom
- ☐ D) Callum
- ☐ E) Aisha

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36 Five children are different heights. Dylan is taller than Oliver. Aisha is shorter than Callum. Aisha is taller than Mei. Callum is shorter than Oliver. Who is in the middle (third tallest)?

- [ ] A) Callum
- [ ] B) Oliver
- [ ] C) Aisha
- [ ] D) Dylan
- [ ] E) Mei

---

37 Five children are different heights. Megan is shorter than Priya. Mei is shorter than Sienna. Priya is shorter than Dylan. Mei is taller than Dylan. Who is in the middle (third tallest)?

- [ ] A) Megan
- [ ] B) Sienna
- [ ] C) Mei
- [ ] D) Dylan
- [ ] E) Priya

---

38 Five children are different heights. Tom is taller than Jack. Jack is taller than Callum. Mei is shorter than Callum. Priya is shorter than Mei. Who is in the middle (third tallest)?

- [ ] A) Mei
- [ ] B) Priya
- [ ] C) Callum
- [ ] D) Tom
- [ ] E) Jack

---

39 Five children are different heights. Priya is taller than Dylan. Priya is shorter than Oliver. Oliver is shorter than Jack. Mei is shorter than Dylan. Who is in the middle (third tallest)?

- [ ] A) Mei
- [ ] B) Priya
- [ ] C) Jack
- [ ] D) Oliver
- [ ] E) Dylan

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40 Five children are different heights. Oliver is shorter than Dylan. Tom is shorter than Jack. Tom is taller than Dylan. Fatima is shorter than Oliver. Who is the second tallest?

- [ ] A) Tom
- [ ] B) Fatima
- [ ] C) Jack
- [ ] D) Oliver
- [ ] E) Dylan

---

41 Five children are different heights. Sienna is shorter than Jack. Megan is taller than Jack. Priya is shorter than Sienna. Aisha is taller than Megan. Who is the second tallest?

- [ ] A) Megan
- [ ] B) Sienna
- [ ] C) Aisha
- [ ] D) Priya
- [ ] E) Jack

---

42 Five children are different heights. Jack is shorter than Priya. Ravi is shorter than Jack. Callum is shorter than Ravi. Dylan is shorter than Callum. Who is the tallest?

- [ ] A) Callum
- [ ] B) Ravi
- [ ] C) Jack
- [ ] D) Priya
- [ ] E) Dylan

---

43 Five children are different heights. Callum is taller than Dylan. Megan is shorter than Ravi. Tom is taller than Callum. Tom is shorter than Megan. Who is in the middle (third tallest)?

- [ ] A) Dylan
- [ ] B) Tom
- [ ] C) Megan
- [ ] D) Callum
- [ ] E) Ravi

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44 Five children are different heights. Priya is taller than Callum. Tom is shorter than Callum. Tom is taller than Sienna. Dylan is shorter than Sienna. Who is in the middle (third tallest)?

- [ ] A) Priya
- [ ] B) Dylan
- [ ] C) Sienna
- [ ] D) Callum
- [ ] E) Tom

---

45 Five children are different heights. Aisha is taller than Ravi. Ravi is taller than Oliver. Priya is shorter than Oliver. Fatima is shorter than Priya. Who is the tallest?

- [ ] A) Priya
- [ ] B) Oliver
- [ ] C) Aisha
- [ ] D) Ravi
- [ ] E) Fatima

---

46 Five children are different heights. Mei is taller than Oliver. Ravi is taller than Tom. Priya is shorter than Tom. Ravi is shorter than Oliver. Who is the second tallest?

- [ ] A) Tom
- [ ] B) Priya
- [ ] C) Mei
- [ ] D) Oliver
- [ ] E) Ravi

---

47 Five children are different heights. Dylan is shorter than Mei. Tom is shorter than Dylan. Mei is shorter than Jack. Tom is taller than Ravi. Who is the shortest?

- [ ] A) Dylan
- [ ] B) Mei
- [ ] C) Ravi
- [ ] D) Tom
- [ ] E) Jack

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48 Five children are different heights. Aisha is taller than Dylan. Megan is taller than Sienna. Megan is shorter than Dylan. Tom is shorter than Sienna. Who is the tallest?

- [ ] A) Dylan
- [ ] B) Aisha
- [ ] C) Tom
- [ ] D) Sienna
- [ ] E) Megan

---

49 Five children are different heights. Fatima is shorter than Tom. Tom is shorter than Oliver. Mei is shorter than Fatima. Callum is taller than Oliver. Who is the tallest?

- [ ] A) Mei
- [ ] B) Oliver
- [ ] C) Tom
- [ ] D) Fatima
- [ ] E) Callum

---

50 Five children are different heights. Mei is taller than Callum. Sienna is shorter than Megan. Tom is shorter than Sienna. Tom is taller than Mei. Who is the shortest?

- [ ] A) Callum
- [ ] B) Mei
- [ ] C) Megan
- [ ] D) Tom
- [ ] E) Sienna

---

51 Five children are different heights. Fatima is taller than Sienna. Mei is shorter than Dylan. Fatima is shorter than Mei. Aisha is taller than Dylan. Who is the second tallest?

- [ ] A) Dylan
- [ ] B) Aisha
- [ ] C) Mei
- [ ] D) Fatima
- [ ] E) Sienna

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52 Four pupils - Noah, Freya, Isaac and Maya - each own a different pet: a cat, a dog, a hamster and a rabbit. (1) Noah does not own the cat or the dog. (2) Freya owns the rabbit. (3) Isaac's pet is not the hamster. (4) Maya does not own the cat. Work out which pet each pupil owns.

(4)

---

53 Five friends - Ravi, Beth, Callum, Dara and Elowen - each play a different sport: Football, Tennis, Swimming, Rugby and Athletics. (1) Ravi's sport comes alphabetically before Beth's sport. (2) Callum does not play Football or Rugby. (3) Dara plays Swimming. (4) Beth does not play Tennis. (5) The person who plays Athletics has a name starting with a vowel.

(4)

---

54 The value of a word is found by adding the alphabet positions of its letters, then multiplying by the number of letters in the word. For example, CAT: C=3, A=1, T=20, sum=24, letters=3, value=24x3=72.

(a) Find the value of the word MATHS. **(3)**

(b) Which has the greater value: SUM or ADD? Show your working. **(3)**

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Mark scheme · 2.15 Logic and Puzzle Problems: 1-hour Pack

Question 1

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

Answer: A) Tom

Question 2

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

Answer: B) Jack

Question 3

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

Answer: A) Ravi

Question 4

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

Answer: C) Jack

Question 5

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

Answer: E) Priya

Question 6

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

Answer: D) Fatima

Question 7

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

Answer: A) Dylan

Question 8

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

Answer: E) Megan

Question 9

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

Answer: C) Oliver

Question 10

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

Answer: D) Sienna

Question 11

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

Answer: B) Megan

Question 12

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

Answer: A) Jack

Question 13

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

Answer: B) Tom

Question 14

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

Answer: C) Oliver

Question 15

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

Answer: D) Jack

Question 16

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

Answer: E) Ravi

Question 17

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

Answer: A) Callum

Question 18

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

Answer: B) Priya

Question 19

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

Answer: D) Sienna

Question 20

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

Answer: E) Ravi

Question 21

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

Answer: C) Priya

Question 22

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

Answer: E) Mei

Question 23

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

Answer: D) Tom

Question 24

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

Answer: B) Priya

Question 25

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

Answer: A) Dylan

Question 26

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

Answer: C) Mei

Question 27

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

Answer: D) Ravi

Question 28

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

Answer: C) Mei

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Question 29

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

Answer: A) Oliver

Question 30

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

Answer: B) Oliver

Question 31

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

Answer: E) Dylan

Question 32

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

Answer: C) Sienna

Question 33

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

Answer: D) Jack

Question 34

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

Answer: B) Oliver

Question 35

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

Answer: E) Aisha

Question 36

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

Answer: A) Callum

Question 37

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

Answer: D) Dylan

Question 38

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

Answer: C) Callum

Question 39

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

Answer: B) Priya

Question 40

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

Answer: A) Tom

Question 41

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

Answer: A) Megan

Question 42

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

Answer: D) Priya

Question 43

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

Answer: B) Tom

Question 44

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

Answer: E) Tom

Question 45

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

Answer: C) Aisha

Question 46

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

Answer: D) Oliver

Question 47

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

Answer: C) Ravi

Question 48

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

Answer: B) Aisha

Question 49

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

Answer: E) Callum

Question 50

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

Answer: A) Callum

Question 51

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

Answer: A) Dylan

Question 52

Noah - hamster cao **B1**

Freya - rabbit cao **B1**

Isaac - cat cao **B1**

Maya - dog cao **B1**

Answer: Noah - hamster, Freya - rabbit, Isaac - cat, Maya - dog

Question 53

Elowen plays Athletics, the only name starting with a vowel (oe) **M1**

Callum plays Tennis, since clue 2 rules out Football and Rugby and Swimming/Athletics are taken (oe) **M1**

compare Football and Rugby alphabetically to place Ravi and Beth: Football comes before Rugby, so Ravi plays Football and Beth plays Rugby (oe) **M1**

full correct set: Ravi-Football, Beth-Rugby, Callum-Tennis, Dara-Swimming, Elowen-Athletics **A1**

Answer: Ravi - Football, Beth - Rugby, Callum - Tennis, Dara - Swimming, Elowen - Athletics

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Question 54

(a) M=13, A=1, T=20, H=8, S=19, sum=61 (oe) **M1**

(a) multiply by 5 letters (oe) **M1**

(a) 305 cao **A1**

(a) Answer: 305

(b) SUM: S=19, U=21, M=13, sum=53, value=53x3=159 (oe) **M1**

(b) ADD: A=1, D=4, D=4, sum=9, value=9x3=27 (oe) **M1**

(b) SUM is greater (159 compared with 27) cao **A1**

(b) Answer: SUM is greater (159 versus 27)

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