3.21 Logic Deduction: 10-minute Pack

GL Assessment 11+ Verbal Reasoning · about 10 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

In each question you are given two or three statements. Treat every statement as TRUE, even if it seems unlikely, and use ONLY the information given (not outside knowledge or guesswork) to work out the answer. Some questions ask you to put people or things in order (for example, by height, age or speed); others give you a rule and ask what must follow from it. Read all the statements carefully before choosing your answer from options A to E. If the statements do not give enough information to be certain, choose the option that says so - do not pick the answer that merely seems likely.

Worked example. Ali is taller than Ben. Ben is taller than Cara. Who is the shortest? A) Ali B) Ben C) Cara D) Cannot tell E) Ali and Cara are the same height **Answer: C) Cara.** The two statements give a complete chain: Ali is taller than Ben, and Ben is taller than Cara. Putting this in order from tallest to shortest gives Ali, then Ben, then Cara, so Cara must be the shortest. There is enough information to be certain, so 'cannot tell' is wrong, and no equality was stated, so option E is also wrong.

1 Four children, Ella, Kofi, Hana and Tom, each play a different one of these: the flute, the piano, the drums and the guitar. Kofi does not play the piano. Tom plays the flute. Ella does not play the piano. Which one does Hana play?

- ☐ A) the guitar
- ☐ B) the drums
- ☐ C) the flute
- ☐ D) the piano
- ☐ E) Cannot tell

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2 Three children, Callum, Sana and Ella, are all different ages. Callum is younger than Ella. Callum is younger than Sana. Who is the youngest?

- ☐ A) Sana
- ☐ B) Callum
- ☐ C) Ella
- ☐ D) Cannot tell
- ☐ E) Ella and Sana are the same

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3 Four cousins, Grace, Ben, Jade and Luke, sit in a row of 4 seats, one in each seat. The seats are numbered 1 to 4 from the left. Ben sits immediately to the right of Jade. Jade does not sit in seat 1, counting from the left. Which seat does Luke sit in?

- ☐ A) Seat 1
- ☐ B) Seat 3
- ☐ C) Cannot tell
- ☐ D) Seat 2
- ☐ E) Seat 4

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4 Four neighbours, Tara, Daisy, Max and Rhys, sit in a row of 4 seats, one in each seat. The seats are numbered 1 to 4 from the left. Tara sits somewhere between Daisy and Rhys. Rhys does not sit in seat 4, counting from the left. Daisy does not sit at either end of the row. Who sits at the far left of the row?

- ☐ A) Cannot tell
- ☐ B) Tara
- ☐ C) Max
- ☐ D) Daisy
- ☐ E) Rhys

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5 Four friends, Nadia, Quinn, Anya and Imran, each like a different one of these: blue, red, purple and yellow. Anya likes yellow. Imran likes red. Nadia likes purple. Which one does Quinn like?

- ☐ A) blue
- ☐ B) red
- ☐ C) Cannot tell
- ☐ D) yellow
- ☐ E) purple

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6 Four neighbours, Luke, Sue, Priya and Omar, all have different amounts of money. Priya is poorer than Sue. Luke is poorer than Omar. Sue is richer than Omar. Which one of these statements must be true?

- ☐ A) Luke is richer than Omar.
- ☐ B) Luke is poorer than Priya.
- ☐ C) Priya is poorer than Luke.
- ☐ D) Sue is richer than Luke.
- ☐ E) Sue is poorer than Luke.

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7 The football, cooking, drama and coding clubs each meet on a different day, Monday to Thursday. Each club meets once a week. The coding club meets on Wednesday. The drama club meets earlier in the week than the coding club. The cooking club meets earlier in the week than the drama club. On which day does the football club meet?

- ☐ A) Monday
- ☐ B) Tuesday
- ☐ C) Cannot tell
- ☐ D) Wednesday
- ☐ E) Thursday

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8 Three friends, Finn, Tara and Beth, are all different in how clever they are. Finn is cleverer than Beth. Tara is cleverer than Finn. Who is the least clever?

- ☐ A) Finn
- ☐ B) Beth
- ☐ C) Beth and Finn are the same
- ☐ D) Tara
- ☐ E) Cannot tell

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9 Rhys is taller than Isla. Callum is taller than Rhys. Isla is not the tallest. Freya is the shortest. Who is the tallest?

- ☐ A) Callum
- ☐ B) Isla
- ☐ C) Rhys
- ☐ D) Freya
- ☐ E) Cannot tell

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10 Statement 1: All the pupils in Class 5 play the recorder.
Statement 2: Priya plays the recorder.
Which conclusion must be true?

- ☐ A) Priya is in Class 5
- ☐ B) Priya is not in Class 5
- ☐ C) All recorder players are in Class 5
- ☐ D) No pupils outside Class 5 play the recorder
- ☐ E) Cannot tell whether Priya is in Class 5

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11 Statement 1: Every student who studies French also studies Spanish.
Statement 2: Ben does not study Spanish.
Which conclusion must be true?

- ☐ A) Ben studies French
- ☐ B) Ben does not study French
- ☐ C) Ben studies Spanish
- ☐ D) Cannot tell whether Ben studies French
- ☐ E) All students study Spanish

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12 Statement 1: If Freya wins the race, she gets a gold medal.
Statement 2: If Freya gets a gold medal, her name goes on the trophy.
Statement 3: Freya's name is not on the trophy.
Which conclusion must be true?

- ☐ A) Freya won the race
- ☐ B) Freya got a gold medal
- ☐ C) Cannot tell whether Freya won the race
- ☐ D) Freya's name will never go on the trophy
- ☐ E) Freya did not win the race

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13 Five friends sit in a row of seats numbered 1 to 5 from the left. Megan sits in seat 1. Niamh sits directly to the right of Megan. Owen sits directly to the left of Kofi. Lena sits in seat 5. Who sits in seat 4?

- ☐ A) Megan
- ☐ B) Kofi
- ☐ C) Owen
- ☐ D) Niamh
- ☐ E) Lena

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Mark scheme · 3.21 Logic Deduction: 10-minute Pack

Question 1

D) the piano - putting the clues together, only the piano fits **B1**

Answer: D) the piano

Question 2

B) Callum - putting the clues together, only Callum fits **B1**

Answer: B) Callum

Question 3

C) Cannot tell - the clues leave more than one answer possible, so it cannot be decided **B1**

Answer: C) Cannot tell

Question 4

E) Rhys - putting the clues together, only Rhys fits **B1**

Answer: E) Rhys

Question 5

A) blue - putting the clues together, only blue fits **B1**

Answer: A) blue

Question 6

D) Sue is richer than Luke. - this is the only statement that is true however the clues are arranged **B1**

Answer: D) Sue is richer than Luke.

Question 7

E) Thursday - putting the clues together, only Thursday fits **B1**

Answer: E) Thursday

Question 8

B) Beth - putting the clues together, only Beth fits **B1**

Answer: B) Beth

Question 9

A) Callum - the order Callum > Rhys > Isla > Freya places Callum at the top **B1**

Answer: A) Callum

Question 10

E) Cannot tell whether Priya is in Class 5 - playing the recorder does not prove membership of Class 5 **B1**

Answer: E) Cannot tell whether Priya is in Class 5

Question 11

B) Ben does not study French - valid by contrapositive: not Spanish means not French **B1**

Answer: B) Ben does not study French

Question 12

E) Freya did not win the race - chained contrapositive: no trophy means no medal means no win **B1**

Answer: E) Freya did not win the race

Question 13

B) Kofi - Megan is in seat 1 and Niamh is in seat 2. Lena is in seat 5, so Owen and Kofi fill seats 3 and 4, and Owen is directly to the left of Kofi. Owen is in seat 3 and Kofi is in seat 4. **B1**

Answer: B) Kofi

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