3.21 Logic Deduction: 30-minute Pack

GL Assessment 11+ Verbal Reasoning · about 30 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 cousins, Nina, Ali, Ethan and Chloe, are all different in how clever they are. Nina is less clever than Ethan. Nina is less clever than Ali. Ali is less clever than Chloe. Which one of these statements must be true?

- ☐ A) Ethan is cleverer than Chloe.
- ☐ B) Chloe is cleverer than Nina.
- ☐ C) Ethan is less clever than Nina.
- ☐ D) Nina is cleverer than Chloe.
- ☐ E) Ethan is less clever than Ali.

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2 Four pupils, Tara, Lucy, Leo and Priya, each eat a different one of these: rice, soup, pasta and salad. Priya eats soup. Leo does not eat salad. Tara eats pasta. Which one does Leo eat?

- ☐ A) pasta
- ☐ B) salad
- ☐ C) Cannot tell
- ☐ D) rice
- ☐ E) soup

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3 Four neighbours, Nathan, Priya, Kim and Daisy, sit in a row of 4 seats, one in each seat. The seats are numbered 1 to 4 from the left. Daisy sits immediately to the right of Nathan. Nathan sits somewhere between Kim and Priya. Which seat does Nathan sit in?

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

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4 The football, drama, choir and chess clubs each meet on a different day, Monday to Thursday. Each club meets once a week. The choir club meets on a day between those of the drama club and the football club. The chess club does not meet on Wednesday. The chess club meets on a day between those of the choir club and the football club. Which club meets on Thursday?

- ☐ A) The football club
- ☐ B) The chess club
- ☐ C) The choir club
- ☐ D) Cannot tell
- ☐ E) The drama club

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5 Four cousins, Callum, Luke, Keira and Ruby, are all different in how clever they are. Luke is less clever than Ruby. Callum is cleverer than Luke. Keira is cleverer than Ruby. Who is the least clever?

- ☐ A) Keira
- ☐ B) Ruby
- ☐ C) Cannot tell
- ☐ D) Luke
- ☐ E) Callum

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6 The football, drama, art and swimming clubs each meet on a different day, Monday to Thursday. Each club meets once a week. The swimming club meets on a day between those of the drama club and the football club. The art club does not meet on Monday or Thursday. The football club meets earlier in the week than the drama club. On which day does the drama club meet?

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

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7 Four neighbours, Aisha, Jack, Finn and Rosa, each like a different one of these: blue, purple, yellow and green. Finn likes purple. Aisha does not like green. Rosa likes blue. Who likes green?

- [ ] A) Finn
- [ ] B) Rosa
- [ ] C) Cannot tell
- [ ] D) Aisha
- [ ] E) Jack

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8 Oliver is older than Maya. Maya is the same age as Daniel. Daniel is older than Ben. Who is the youngest?

- [ ] A) Oliver
- [ ] B) Ben
- [ ] C) Maya
- [ ] D) Daniel
- [ ] E) Cannot tell

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9 Four cousins, Kim, Molly, Faye and Holly, all have different amounts of money. Faye is poorer than Molly. Faye is richer than Kim. Holly is richer than Kim. Who is the poorest?

- [ ] A) Cannot tell
- [ ] B) Holly
- [ ] C) Kim
- [ ] D) Molly
- [ ] E) Faye

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10 Four cousins, Mia, Aisha, Ethan and Chloe, sit in a row of 4 seats, one in each seat. The seats are numbered 1 to 4 from the left. Ethan sits somewhere to the left of Chloe. Mia does not sit in seat 2, counting from the left. Which seat does Ethan sit in?

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

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11 The dance, choir, chess, science and swimming clubs each meet on a different day, Monday to Friday. Each club meets once a week. The choir club meets on the day after the swimming club. The science club meets earlier in the week than the swimming club. The science club does not meet on Monday or Friday. The chess club meets on a day between those of the science club and the swimming club. On which day does the choir club meet?

- ☐ A) Friday
- ☐ B) Thursday
- ☐ C) Tuesday
- ☐ D) Wednesday
- ☐ E) Monday

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12 Four friends, Yusuf, Jade, Nadia and Callum, sit in a row of 4 seats, one in each seat. The seats are numbered 1 to 4 from the left. Nadia does not sit at either end of the row. Jade sits in seat 3, counting from the left. Yusuf sits immediately to the right of Jade. Which seat does Callum sit in?

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

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13 Four cousins, Sana, Neil, Imran and Anya, are all different in strength. Anya is stronger than Neil. Imran is weaker than Sana. Imran is weaker than Neil. Who is the weakest?

- ☐ A) Cannot tell
- ☐ B) Neil
- ☐ C) Imran
- ☐ D) Anya
- ☐ E) Sana

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14 Four cousins, Rosa, Imran, Keira and Sue, sit in a row of 4 seats, one in each seat. The seats are numbered 1 to 4 from the left. Imran sits immediately to the right of Rosa. Rosa sits somewhere between Keira and Sue. Who sits in seat 2, counting from the left?

- ☐ A) Cannot tell
- ☐ B) Sue
- ☐ C) Imran
- ☐ D) Rosa
- ☐ E) Keira

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15 Four children, Hana, Nathan, Quinn and Noah, each drink a different one of these: juice, cocoa, water and tea. They each also eat a different one of these: rice, pasta, salad and soup. Quinn does not eat salad. Quinn drinks juice. The child who drinks tea does not eat pasta. Nathan eats rice. Nathan drinks water. Noah eats pasta. Which one does the child who eats salad drink?

- ☐ A) water
- ☐ B) cocoa
- ☐ C) Cannot tell
- ☐ D) juice
- ☐ E) tea

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16 The coding, science, football and drama clubs each meet on a different day, Monday to Thursday. Each club meets once a week. The football club does not meet on Wednesday. The drama club meets on a day between those of the football club and the science club. On which day does the coding club meet?

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

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17 In a queue, Ryan is in front of Chen. Chen is in front of Aisha. Aisha is in front of Sophie. Who is at the back of the queue?

- [ ] A) Ryan
- [ ] B) Chen
- [ ] C) Sophie
- [ ] D) Aisha
- [ ] E) Cannot tell

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18 The cooking, football, art and drama clubs each meet on a different day, Monday to Thursday. Each club meets once a week. The art club does not meet on Monday or Thursday. The art club meets on the day after the drama club. The drama club meets on the day before or the day after the football club. Which club meets on Wednesday?

- [ ] A) The art club
- [ ] B) Cannot tell
- [ ] C) The drama club
- [ ] D) The football club
- [ ] E) The cooking club

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19 Four cousins, Finn, Lucy, Nadia and Lena, all run at different speeds. Finn is faster than Lucy. Lena is slower than Lucy. Finn is faster than Nadia. Which one of these statements must be true?

- [ ] A) Lucy is faster than Nadia.
- [ ] B) Lucy is faster than Finn.
- [ ] C) Nadia is faster than Lucy.
- [ ] D) Finn is slower than Lena.
- [ ] E) Lena is slower than Finn.

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20 The art, swimming, football and choir clubs each meet on a different day, Monday to Thursday. Each club meets once a week. The swimming club meets on Tuesday. The choir club meets on the day after the swimming club. The swimming club meets on a day between those of the choir club and the football club. Which club meets on Monday?

- [ ] A) Cannot tell
- [ ] B) The choir club
- [ ] C) The football club
- [ ] D) The art club
- [ ] E) The swimming club

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21 Five friends, Ben, Sue, Yusuf, Neil and Isla, are all different ages. Yusuf is younger than Isla. Yusuf is older than Sue. Neil is older than Ben. Yusuf is older than Neil. Who is the oldest?

- [ ] A) Ben
- [ ] B) Sue
- [ ] C) Cannot tell
- [ ] D) Isla
- [ ] E) Neil

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22 Five pupils, Neil, Jade, Quinn, Liam and Freya, all run at different speeds. Freya is slower than Quinn. Neil is faster than Jade. Neil is slower than Freya. Freya is faster than Liam. Who is the second fastest?

- [ ] A) Freya
- [ ] B) Neil
- [ ] C) Liam
- [ ] D) Jade
- [ ] E) Quinn

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23 The cooking, coding, choir and swimming clubs each meet on a different day, Monday to Thursday. Each club meets once a week. The cooking club meets on a day between those of the choir club and the coding club. The cooking club meets earlier in the week than the coding club. The swimming club meets earlier in the week than the coding club. On which day does the choir club meet?

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

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24 Five children, Ella, Eli, Mia, Tom and Rosa, all have different amounts of money. Mia is richer than Tom. Ella is richer than Eli. Ella is richer than Rosa. Rosa is poorer than Tom. Which one of these statements must be true?

- [ ] A) Mia is poorer than Tom.
- [ ] B) Mia is richer than Rosa.
- [ ] C) Ella is poorer than Tom.
- [ ] D) Tom is poorer than Ella.
- [ ] E) Mia is poorer than Rosa.

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25 Three children, Theo, Una and Omar, all have different weights. Una is lighter than Theo. Theo is heavier than Omar. Who is the heaviest?

- [ ] A) Theo and Una are the same
- [ ] B) Cannot tell
- [ ] C) Una
- [ ] D) Theo
- [ ] E) Omar

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26 Amara arrived before Kwame. Leo arrived after Amara but before Zara. Kwame arrived after Zara. Who arrived first?

- [ ] A) Leo
- [ ] B) Zara
- [ ] C) Kwame
- [ ] D) Amara
- [ ] E) Cannot tell

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27 Four pupils, Callum, Max, Leo and Eli, sit in a row of 4 seats, one in each seat. The seats are numbered 1 to 4 from the left. Eli sits next to Max. Max sits in seat 1, counting from the left. Who sits in seat 2, counting from the left?

- [ ] A) Eli
- [ ] B) Cannot tell
- [ ] C) Max
- [ ] D) Callum
- [ ] E) Leo

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28 Four pupils, Molly, Sana, Eli and Holly, are all different heights. Holly is shorter than Sana. Sana is taller than Molly. Molly is shorter than Eli. Who is the shortest?

- [ ] A) Holly
- [ ] B) Eli
- [ ] C) Sana
- [ ] D) Molly
- [ ] E) Cannot tell

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29 Four cousins, Max, Kim, Tom and Beth, sit in a row of 4 seats, one in each seat. The seats are numbered 1 to 4 from the left. Max does not sit in seat 1, counting from the left. Tom sits somewhere between Beth and Kim. Kim sits somewhere between Beth and Max. Which seat does Kim sit in?

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

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30 The drama, football, dance and coding clubs each meet on a different day, Monday to Thursday. Each club meets once a week. The drama club does not meet on Monday. The dance club meets on the day after the drama club. The dance club does not meet on Monday or Thursday. On which day does the drama club meet?

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

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31 Three pupils, Dev, Ethan and Neil, are all different in how clever they are. Ethan is less clever than Neil. Dev is cleverer than Neil. Who is the cleverest?

- [ ] A) Neil and Dev are the same
- [ ] B) Ethan
- [ ] C) Cannot tell
- [ ] D) Dev
- [ ] E) Neil

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32 Four neighbours, Lucy, Sue, Grace and Jade, sit in a row of 4 seats, one in each seat. The seats are numbered 1 to 4 from the left. Lucy sits somewhere between Grace and Sue. Sue sits somewhere to the left of Lucy. Jade sits in seat 2, counting from the left. Which seat does Grace sit in?

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

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33 Four children, Noah, Zara, Una and Tara, each eat a different one of these: rice, salad, pizza and soup. Noah does not eat pizza. Zara does not eat soup. Una eats salad. Noah does not eat soup. Which one does Zara eat?

- [ ] A) salad
- [ ] B) pizza
- [ ] C) rice
- [ ] D) soup
- [ ] E) Cannot tell

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34 Three neighbours, Anya, Ravi and Tom, are all different heights. Tom is shorter than Ravi. Anya is shorter than Ravi. Who is the tallest?

- [ ] A) Cannot tell
- [ ] B) Tom
- [ ] C) Anya
- [ ] D) Anya and Ravi are the same
- [ ] E) Ravi

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35 Five pupils, Priya, Mia, Callum, Freya and Chloe, all have different amounts of money. Mia is richer than Priya. Callum is poorer than Priya. Callum is richer than Freya. Chloe is poorer than Freya. Who is the poorest?

- [ ] A) Mia
- [ ] B) Priya
- [ ] C) Chloe
- [ ] D) Callum
- [ ] E) Freya

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36 Statement 1: No fish can walk.
Statement 2: A trout is a fish.
Which conclusion must be true?

- [ ] A) A trout cannot walk
- [ ] B) A trout can walk
- [ ] C) Some fish can walk
- [ ] D) All animals that cannot walk are fish
- [ ] E) Cannot tell whether a trout can walk

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37 Statement 1: If it is raining, Oliver carries an umbrella.
Statement 2: Oliver is carrying an umbrella.
Which conclusion must be true?

- [ ] A) It is raining
- [ ] B) It is not raining
- [ ] C) Oliver always carries an umbrella
- [ ] D) Cannot tell whether it is raining
- [ ] E) Oliver carries an umbrella only when it rains

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38 Jade, Kabir, Lucy and Milo each order a different drink: milk, juice, tea or water. Jade does not order water. Milo orders either juice or milk. Kabir does not order water. What does Lucy order?

- [ ] A) Juice
- [ ] B) Cannot tell
- [ ] C) Tea
- [ ] D) Milk
- [ ] E) Water

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39 Four children, Ali, Bea, Cy and Dot, sit at a square table, one on each side: north, east, south and west. Ali sits on the north side. Dot sits on the east side. Bea sits opposite Dot. Who sits on the south side?

- [ ] A) Ali
- [ ] B) Cannot tell
- [ ] C) Cy
- [ ] D) Dot
- [ ] E) Bea

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Mark scheme · 3.21 Logic Deduction: 30-minute Pack

Question 1

B) Chloe is cleverer than Nina. - this is the only statement that is true however the clues are arranged **B1**

Answer: B) Chloe is cleverer than Nina.

Question 2

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

Answer: D) rice

Question 3

C) Seat 2 - putting the clues together, only Seat 2 fits **B1**

Answer: C) Seat 2

Question 4

E) The drama club - putting the clues together, only The drama club fits **B1**

Answer: E) The drama club

Question 5

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

Answer: D) Luke

Question 6

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

Answer: B) Thursday

Question 7

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

Answer: E) Jack

Question 8

B) Ben - the order Oliver > Maya = Daniel > Ben places Ben last **B1**

Answer: B) Ben

Question 9

C) Kim - putting the clues together, only Kim fits **B1**

Answer: C) Kim

Question 10

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

Answer: B) Cannot tell

Question 11

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

Answer: A) Friday

Question 12

D) Seat 1 - putting the clues together, only Seat 1 fits **B1**

Answer: D) Seat 1

Question 13

C) Imran - putting the clues together, only Imran fits **B1**

Answer: C) Imran

Question 14

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

Answer: D) Rosa

Question 15

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

Answer: E) tea

Question 16

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

Answer: B) Cannot tell

Question 17

C) Sophie - the order Ryan, Chen, Aisha, Sophie (front to back) places Sophie last **B1**

Answer: C) Sophie

Question 18

A) The art club - putting the clues together, only The art club fits **B1**

Answer: A) The art club

Question 19

E) Lena is slower than Finn. - this is the only statement that is true however the clues are arranged **B1**

Answer: E) Lena is slower than Finn.

Question 20

C) The football club - putting the clues together, only The football club fits **B1**

Answer: C) The football club

Question 21

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

Answer: D) Isla

Question 22

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

Answer: A) Freya

Question 23

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

Answer: E) Cannot tell

Question 24

B) Mia is richer than Rosa. - this is the only statement that is true however the clues are arranged **B1**

Answer: B) Mia is richer than Rosa.

Question 25

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

Answer: D) Theo

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Question 26

D) Amara - the order Amara, Leo, Zara, Kwame (earliest to latest) places Amara first **B1**

Answer: D) Amara

Question 27

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

Answer: A) Eli

Question 28

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

Answer: E) Cannot tell

Question 29

B) Seat 3 - putting the clues together, only Seat 3 fits **B1**

Answer: B) Seat 3

Question 30

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

Answer: A) Tuesday

Question 31

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

Answer: D) Dev

Question 32

A) Seat 4 - putting the clues together, only Seat 4 fits **B1**

Answer: A) Seat 4

Question 33

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

Answer: B) pizza

Question 34

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

Answer: E) Ravi

Question 35

C) Chloe - putting the clues together, only Chloe fits **B1**

Answer: C) Chloe

Question 36

A) A trout cannot walk - a valid deduction: no fish can walk, and a trout is a fish **B1**

Answer: A) A trout cannot walk

Question 37

D) Cannot tell whether it is raining - carrying an umbrella does not confirm the reason why **B1**

Answer: D) Cannot tell whether it is raining

Question 38

E) Water - Jade and Kabir do not order water, and Milo orders juice or milk, so water is left for Lucy. **B1**

Answer: E) Water

Question 39

C) Cy - Ali is on the north side and Dot is on the east side. Bea sits opposite Dot, so Bea is on the west side. Cy has the last side, the south. **B1**

Answer: C) Cy

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