3.21-2 Logic Deduction: Practice Set 2: 10-minute Pack

GL ASSESSMENT GL VR type 21 · about 10 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

Each question gives you two or more statements about people, animals or objects. Every statement must be treated as certainly true, however unusual it seems, and your answer must be based only on what the statements actually say, never on outside knowledge, guesswork or what seems likely. Some questions ask you to order people or things (for example by age, height, speed or cost); others give you a rule and ask what must logically follow from it. Read every statement carefully before choosing one option from A to E. Only pick 'cannot tell' if the statements truly do not give enough information to be certain; do not choose it just because working out the answer takes several steps.

Worked example. Aiden is taller than Bea. Bea is taller than Chidi. Who is the shortest? A) Aiden B) Bea C) Chidi D) Cannot tell E) Aiden and Chidi are the same height **Answer: C) Chidi.** Combine the two statements into a single order: Aiden is taller than Bea, and Bea is taller than Chidi, so from tallest to shortest the order is Aiden, then Bea, then Chidi. Chidi is therefore the shortest. Because the chain is complete, 'cannot tell' is wrong, and no equal heights were mentioned, so option E is also wrong.

1 Yasmin is faster than Zaid. Amelia is slower than Yasmin but faster than Bilal. Who is the slowest?

- ☐ A) Yasmin
- ☐ B) Zaid
- ☐ C) Amelia
- ☐ D) Bilal
- ☐ E) Cannot tell for certain

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2 Cody is taller than Dexter. Ethan is taller than Cody. Dexter is not the shortest. Farah is the shortest. Who is the tallest?

- ☐ A) Ethan
- ☐ B) Dexter
- ☐ C) Cody
- ☐ D) Farah
- ☐ E) Cannot tell

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3 Grace is older than Harun. Harun is the same age as Idris. Idris is older than Jayden. Who is the youngest?

- [ ] A) Grace
- [ ] B) Jayden
- [ ] C) Harun
- [ ] D) Idris
- [ ] E) Cannot tell

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4 In a race, Kiran finished before Lola. Lola finished before Mason. Mason finished before Noah. Who finished last?

- [ ] A) Kiran
- [ ] B) Lola
- [ ] C) Noah
- [ ] D) Mason
- [ ] E) Cannot tell

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5 Omar arrived before Poppy. Quinn arrived after Omar but before Reece. Poppy arrived after Reece. Who arrived first?

- [ ] A) Quinn
- [ ] B) Reece
- [ ] C) Poppy
- [ ] D) Omar
- [ ] E) Cannot tell

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6 Statement 1: All the pupils in Year 6 wear blue jumpers.
Statement 2: Noah wears a blue jumper.
Which conclusion must be true?

- [ ] A) Noah is in Year 6
- [ ] B) Noah is not in Year 6
- [ ] C) All blue-jumper wearers are in Year 6
- [ ] D) No pupils outside Year 6 wear blue jumpers
- [ ] E) Cannot tell whether Noah is in Year 6

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7 Statement 1: No reptiles can fly.
Statement 2: A gecko is a reptile.
Which conclusion must be true?

- ☐ A) A gecko can fly
- ☐ B) A gecko cannot fly
- ☐ C) Some reptiles can fly
- ☐ D) All animals that cannot fly are reptiles
- ☐ E) Cannot tell whether a gecko can fly

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8 Statement 1: Every student who studies Latin also studies Greek.
Statement 2: Poppy does not study Greek.
Which conclusion must be true?

- ☐ A) Poppy studies Latin
- ☐ B) Poppy does not study Latin
- ☐ C) Poppy studies Greek
- ☐ D) Cannot tell whether Poppy studies Latin
- ☐ E) All students study Greek

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9 Statement 1: Some of the counters in the jar are red.
Statement 2: All red counters in the jar are plastic.
Which conclusion must be true?

- ☐ A) All counters in the jar are plastic
- ☐ B) No counters in the jar are plastic
- ☐ C) Some counters in the jar are plastic
- ☐ D) All plastic counters in the jar are red
- ☐ E) Cannot tell whether any counters in the jar are plastic

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10 Statement 1: If it is frosty, Quinn wears gloves.
Statement 2: Quinn is wearing gloves.
Which conclusion must be true?

- ☐ A) It is frosty
- ☐ B) It is not frosty
- ☐ C) Quinn always wears gloves
- ☐ D) Cannot tell whether it is frosty
- ☐ E) Quinn wears gloves only when it is frosty

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11 Statement 1: If Reece wins the spelling bee, he receives a certificate.
Statement 2: If Reece receives a certificate, his name is read out in assembly.
Statement 3: Reece's name was not read out in assembly.
Which conclusion must be true?

- [ ] A) Reece won the spelling bee
- [ ] B) Reece received a certificate
- [ ] C) Cannot tell whether Reece won the spelling bee
- [ ] D) Reece's name will never be read out in assembly
- [ ] E) Reece did not win the spelling bee

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12 Saanvi is taller than Theo. Theo is taller than Umar. Umar is not the shortest. Vikram is shorter than Umar. Vikram is taller than Willow. Who is the shortest?

- [ ] A) Willow
- [ ] B) Saanvi
- [ ] C) Theo
- [ ] D) Umar
- [ ] E) Vikram

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13 Xavier is older than Yasmin. Yasmin is older than Zaid. Zaid is older than Amelia. Amelia is older than Bilal. Who is the second youngest?

- [ ] A) Xavier
- [ ] B) Amelia
- [ ] C) Yasmin
- [ ] D) Zaid
- [ ] E) Bilal

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Mark scheme · 3.21-2 Logic Deduction: Practice Set 2: 10-minute Pack

Question 1

E) Cannot tell for certain - Zaid is never compared with Amelia or Bilal, so his position among them is unknown **B1**

Answer: E) Cannot tell for certain

Question 2

A) Ethan - the order Ethan > Cody > Dexter > Farah places Ethan at the top **B1**

Answer: A) Ethan

Question 3

B) Jayden - the order Grace > Harun = Idris > Jayden places Jayden last **B1**

Answer: B) Jayden

Question 4

C) Noah - the order Kiran, Lola, Mason, Noah (first to last) places Noah last **B1**

Answer: C) Noah

Question 5

D) Omar - the order Omar, Quinn, Reece, Poppy (earliest to latest) places Omar first **B1**

Answer: D) Omar

Question 6

E) Cannot tell whether Noah is in Year 6 - wearing a blue jumper does not prove membership of Year 6 **B1**

Answer: E) Cannot tell whether Noah is in Year 6

Question 7

B) A gecko cannot fly - a valid deduction: no reptiles can fly, and a gecko is a reptile **B1**

Answer: B) A gecko cannot fly

Question 8

B) Poppy does not study Latin - valid by contrapositive: not Greek means not Latin **B1**

Answer: B) Poppy does not study Latin

Question 9

C) Some counters in the jar are plastic - the red counters that exist must be plastic, so at least some counters are plastic **B1**

Answer: C) Some counters in the jar are plastic

Question 10

D) Cannot tell whether it is frosty - wearing gloves does not confirm the reason why **B1**

Answer: D) Cannot tell whether it is frosty

Question 11

E) Reece did not win the spelling bee - chained contrapositive: no assembly mention means no certificate means no win **B1**

Answer: E) Reece did not win the spelling bee

Question 12

A) Willow - the order Saanvi > Theo > Umar > Vikram > Willow places Willow last **B1**

Answer: A) Willow

Question 13

B) Amelia - the order Xavier > Yasmin > Zaid > Amelia > Bilal places Amelia second from the bottom **B1**

Answer: B) Amelia

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