2.99 Distance, Speed and Time Problems: Test Pack

GL ASSESSMENT GL-11PLUS-MATHS · Calculators not allowed · about 60 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 A car travels at 60 km/h for 2.5 hours. How far does it travel?

- ☐ A) 120 km
- ☐ B) 130 km
- ☐ C) 150 km
- ☐ D) 180 km
- ☐ E) 240 km

---

2 Ben drives 120 km at 40 km/h and then 36 km at 12 km/h. What is Ben's average speed for the whole journey, in km/h?

- ☐ A) 25 km/h
- ☐ B) 156 km/h
- ☐ C) 78 km/h
- ☐ D) 52 km/h
- ☐ E) 26 km/h

---

3 Sana drives 36 km at 36 km/h and then 45 km at 45 km/h. What is Sana's average speed for the whole journey, in km/h?

- ☐ A) 4.05 km/h
- ☐ B) 81 km/h
- ☐ C) 40.5 km/h
- ☐ D) 41.5 km/h
- ☐ E) 405 km/h

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4 Zainab drives 12 km at 12 km/h and then 240 km at 80 km/h. What is Zainab's average speed for the whole journey, in km/h?

- ☐ A) 46 km/h
- ☐ B) 63 km/h
- ☐ C) 126 km/h
- ☐ D) 252 km/h
- ☐ E) 84 km/h

---

5 Kofi drives 180 km at 90 km/h and then 15 km at 15 km/h. What is Kofi's average speed for the whole journey, in km/h?

- ☐ A) 52.5 km/h
- ☐ B) 65 km/h
- ☐ C) 66 km/h
- ☐ D) 64 km/h
- ☐ E) 97.5 km/h

---

6 A cyclist travels at an average speed of 18 km/h for 20 minutes. How far does it travel?

- ☐ A) 6 km
- ☐ B) 18 km
- ☐ C) 7 km
- ☐ D) 3.6 km
- ☐ E) 360 km

---

7 A driver covers 210 km at an average speed of 70 km/h. How long does the journey take?

(1)

---

8 Declan drives 100 km at 50 km/h and then 135 km at 45 km/h. What is Declan's average speed for the whole journey, in km/h?

- ☐ A) 47 km/h
- ☐ B) 47.5 km/h
- ☐ C) 48 km/h
- ☐ D) 235 km/h
- ☐ E) 117.5 km/h

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9 Ethan drives 60 km at 15 km/h and then 50 km at 50 km/h. What is Ethan's average speed for the whole journey, in km/h?

- [ ] A) 23 km/h
- [ ] B) 55 km/h
- [ ] C) 32.5 km/h
- [ ] D) 21 km/h
- [ ] E) 22 km/h

---

10 Leo drives 40 km at 20 km/h and then 90 km at 30 km/h. What is Leo's average speed for the whole journey, in km/h?

- [ ] A) 27 km/h
- [ ] B) 25 km/h
- [ ] C) 130 km/h
- [ ] D) 65 km/h
- [ ] E) 26 km/h

---

11 Poppy drives 360 km at 90 km/h and then 72 km at 36 km/h. What is Poppy's average speed for the whole journey, in km/h?

- [ ] A) 216 km/h
- [ ] B) 63 km/h
- [ ] C) 73 km/h
- [ ] D) 432 km/h
- [ ] E) 72 km/h

---

12 Lily drives 48 km at 24 km/h and then 15 km at 15 km/h. What is Lily's average speed for the whole journey, in km/h?

- [ ] A) 63 km/h
- [ ] B) 20 km/h
- [ ] C) 21 km/h
- [ ] D) 31.5 km/h
- [ ] E) 19.5 km/h

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13 Esme drives 144 km at 72 km/h and then 120 km at 40 km/h. What is Esme's average speed for the whole journey, in km/h?

- [ ] A) 56 km/h
- [ ] B) 132 km/h
- [ ] C) 53.8 km/h
- [ ] D) 51.8 km/h
- [ ] E) 52.8 km/h

---

14 Aisha drives 160 km at 80 km/h and then 72 km at 24 km/h. What is Aisha's average speed for the whole journey, in km/h?

- [ ] A) 46.4 km/h
- [ ] B) 116 km/h
- [ ] C) 232 km/h
- [ ] D) 52 km/h
- [ ] E) 45.4 km/h

---

15 A jogger covers 5 km in 20 minutes. Work out the jogger's speed in km/h.

(1)

---

16 A cyclist covers 36 km in 3 hours. What is its average speed in km/h?

- [ ] A) 13 km/h
- [ ] B) 0.2 km/h
- [ ] C) 12 km/h
- [ ] D) 20 km/h
- [ ] E) 108 km/h

---

17 A coach covers 30 km in 3 hours. What is its average speed in km/h?

- [ ] A) 10 km/h
- [ ] B) 90 km/h
- [ ] C) 6 km/h
- [ ] D) 9 km/h
- [ ] E) 210 km/h

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18 A coach covers 150 km in 2 hours 30 minutes. What is its average speed in km/h?

- [ ] A) 59 km/h
- [ ] B) 100 km/h
- [ ] C) 375 km/h
- [ ] D) 1 km/h
- [ ] E) 60 km/h

---

19 Isla drives 20 km at 20 km/h and then 100 km at 50 km/h. What is Isla's average speed for the whole journey, in km/h?

- [ ] A) 40 km/h
- [ ] B) 39 km/h
- [ ] C) 35 km/h
- [ ] D) 120 km/h
- [ ] E) 60 km/h

---

20 Niamh drives 48 km at 24 km/h and then 90 km at 30 km/h. What is Niamh's average speed for the whole journey, in km/h?

- [ ] A) 46 km/h
- [ ] B) 27 km/h
- [ ] C) 69 km/h
- [ ] D) 26.6 km/h
- [ ] E) 27.6 km/h

---

21 Fatima drives 216 km at 72 km/h and then 60 km at 20 km/h. What is Fatima's average speed for the whole journey, in km/h?

- [ ] A) 138 km/h
- [ ] B) 45 km/h
- [ ] C) 92 km/h
- [ ] D) 276 km/h
- [ ] E) 46 km/h

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22 Lily drives 160 km at 40 km/h and then 120 km at 30 km/h. What is Lily's average speed for the whole journey, in km/h?

- [ ] A) 280 km/h
- [ ] B) 140 km/h
- [ ] C) 35 km/h
- [ ] D) 70 km/h
- [ ] E) 34 km/h

---

23 A cyclist covers 72 km in 1 hour 30 minutes. What is its average speed in km/h?

- [ ] A) 0.8 km/h
- [ ] B) 162 km/h
- [ ] C) 47 km/h
- [ ] D) 48 km/h
- [ ] E) 80 km/h

---

24 A walker travels at an average speed of 12 km/h for 30 minutes. How far does it travel?

- [ ] A) 5 km
- [ ] B) 360 km
- [ ] C) 12 km
- [ ] D) 6 km
- [ ] E) 7 km

---

25 Oliver drives 144 km at 36 km/h and then 180 km at 45 km/h. What is Oliver's average speed for the whole journey, in km/h?

- [ ] A) 81 km/h
- [ ] B) 41.5 km/h
- [ ] C) 324 km/h
- [ ] D) 40.5 km/h
- [ ] E) 162 km/h

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26 Harry drives 80 km at 20 km/h and then 160 km at 40 km/h. What is Harry's average speed for the whole journey, in km/h?

- [ ] A) 60 km/h
- [ ] B) 120 km/h
- [ ] C) 31 km/h
- [ ] D) 29 km/h
- [ ] E) 30 km/h

---

27 A runner travels at an average speed of 8 km/h for 1 hour. How far does it travel?

- [ ] A) 8 km
- [ ] B) 4.8 km
- [ ] C) 480 km
- [ ] D) 68 km
- [ ] E) 9 km

---

28 A cyclist travels at an average speed of 24 km/h for 2 hours 30 minutes. How far does it travel?

- [ ] A) 59 km
- [ ] B) 3,600 km
- [ ] C) 60 km
- [ ] D) 36 km
- [ ] E) 48 km

---

29 Zainab drives 150 km at 50 km/h and then 48 km at 24 km/h. What is Zainab's average speed for the whole journey, in km/h?

- [ ] A) 66 km/h
- [ ] B) 198 km/h
- [ ] C) 39.6 km/h
- [ ] D) 99 km/h
- [ ] E) 37 km/h

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30 Poppy drives 30 km at 30 km/h and then 216 km at 72 km/h. What is Poppy's average speed for the whole journey, in km/h?

- [ ] A) 61.5 km/h
- [ ] B) 62.5 km/h
- [ ] C) 123 km/h
- [ ] D) 60.5 km/h
- [ ] E) 51 km/h

---

31 A train travels 18 km at an average speed of 72 km/h. How long does the journey take?

- [ ] A) 25 minutes
- [ ] B) 1 hour 15 minutes
- [ ] C) 30 minutes
- [ ] D) 21 hours 36 minutes
- [ ] E) 15 minutes

---

32 A cyclist travels at an average speed of 10 km/h for 2 hours 30 minutes. How far does it travel?

- [ ] A) 25 km
- [ ] B) 1,500 km
- [ ] C) 20 km
- [ ] D) 24 km
- [ ] E) 160 km

---

33 A walker travels 6 km at an average speed of 10 km/h. How long does the journey take?

- [ ] A) 1 hour 36 minutes
- [ ] B) 1 hour 40 minutes
- [ ] C) 1 hour
- [ ] D) 36 minutes
- [ ] E) 21 minutes

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34 A train covers 108 km in 1 hour 30 minutes. What is its average speed in km/h?

- [ ] A) 1.2 km/h
- [ ] B) 120 km/h
- [ ] C) 162 km/h
- [ ] D) 72 km/h
- [ ] E) 198 km/h

---

35 A walker travels 18 km at an average speed of 6 km/h. How long does the journey take?

- [ ] A) 1 hour 48 minutes
- [ ] B) 4 hours
- [ ] C) 3 hours
- [ ] D) 20 minutes
- [ ] E) 2 hours 45 minutes

---

36 A cyclist travels at an average speed of 90 km/h for 30 minutes. How far does it travel?

- [ ] A) 2,700 km
- [ ] B) 90 km
- [ ] C) 45 km
- [ ] D) 44 km
- [ ] E) 46 km

---

37 A walker travels 5 km at an average speed of 4 km/h. How long does the journey take?

- [ ] A) 20 minutes
- [ ] B) 2 hours 15 minutes
- [ ] C) 1 hour 15 minutes
- [ ] D) 1 hour 25 minutes
- [ ] E) 48 minutes

---

38 A walker goes 5 km at an average speed of 4 km/h. Work out how long the walk takes, giving your answer in hours and minutes.

(2)

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39 A cyclist travels 36 km at an average speed of 12 km/h. How long does the journey take?

- [ ] A) 2 hours 45 minutes
- [ ] B) 4 hours
- [ ] C) 20 minutes
- [ ] D) 3 hours
- [ ] E) 7 hours 12 minutes

---

40 A cyclist travels 15 km at an average speed of 30 km/h. How long does the journey take?

- [ ] A) 50 minutes
- [ ] B) 1 hour 30 minutes
- [ ] C) 2 hours
- [ ] D) 7 hours 30 minutes
- [ ] E) 30 minutes

---

41 A vehicle travels 48 km in 40 minutes. Calculate its speed in km/h.

(2)

---

42 Aisha drives 180 km at 90 km/h and then 60 km at 15 km/h. What is Aisha's average speed for the whole journey, in km/h?

- [ ] A) 52.5 km/h
- [ ] B) 40 km/h
- [ ] C) 120 km/h
- [ ] D) 41 km/h
- [ ] E) 240 km/h

---

43 Lily drives 48 km at 12 km/h and then 48 km at 24 km/h. What is Lily's average speed for the whole journey, in km/h?

- [ ] A) 48 km/h
- [ ] B) 24 km/h
- [ ] C) 16 km/h
- [ ] D) 18 km/h
- [ ] E) 15 km/h

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44 Harry drives 160 km at 40 km/h and then 36 km at 12 km/h. What is Harry's average speed for the whole journey, in km/h?

- [ ] A) 27 km/h
- [ ] B) 29 km/h
- [ ] C) 98 km/h
- [ ] D) 26 km/h
- [ ] E) 28 km/h

---

45 A train covers 24 km in 1 hour. What is its average speed in km/h?

- [ ] A) 2.5 km/h
- [ ] B) 23 km/h
- [ ] C) 40 km/h
- [ ] D) 24 km/h
- [ ] E) 0.4 km/h

---

46 A train travels at 80 km/h. How long does it take to go 200 km?

- [ ] A) 2 hours
- [ ] B) 2 hours 15 minutes
- [ ] C) 2 hours 30 minutes
- [ ] D) 2 hours 45 minutes
- [ ] E) 3 hours

---

47 Ravi drives 96 km at 24 km/h and then 72 km at 36 km/h. What is Ravi's average speed for the whole journey, in km/h?

- [ ] A) 42 km/h
- [ ] B) 27 km/h
- [ ] C) 30 km/h
- [ ] D) 28 km/h
- [ ] E) 84 km/h

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48 Megan drives 80 km at 80 km/h and then 36 km at 12 km/h. What is Megan's average speed for the whole journey, in km/h?

- [ ] A) 30 km/h
- [ ] B) 58 km/h
- [ ] C) 29 km/h
- [ ] D) 46 km/h
- [ ] E) 116 km/h

---

49 Lily drives 108 km at 36 km/h and then 216 km at 72 km/h. What is Lily's average speed for the whole journey, in km/h?

- [ ] A) 53 km/h
- [ ] B) 108 km/h
- [ ] C) 55 km/h
- [ ] D) 54 km/h
- [ ] E) 162 km/h

---

50 A coach travels at an average speed of 5 km/h for 2 hours. How far does it travel?

- [ ] A) 11 km
- [ ] B) 9 km
- [ ] C) 10 km
- [ ] D) 600 km
- [ ] E) 6 km

---

51 A runner travels 10 km at an average speed of 4 km/h. How long does the journey take?

- [ ] A) 2 hours 30 minutes
- [ ] B) 2 hours 50 minutes
- [ ] C) 24 minutes
- [ ] D) 2 hours 15 minutes
- [ ] E) 40 minutes

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52 Jan runs 5 km to a park at 8 km/h and returns 5 km at 5 km/h. Calculate her average speed for the whole trip. Give your answer to 2 decimal places.

(2)

---

53 A cyclist goes to a village at 12 km/h and returns at 8 km/h. The whole trip takes 5 hours. Find the one-way distance to the village.

(3)

---

54 Two towns A and B are 150 km apart. A car leaves A at 09:00 travelling towards B at 50 km/h. At 10:00 a second car leaves B towards A at 60 km/h. At what time do they meet? Give your answer to the nearest minute.

(3)

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Mark scheme · 2.99 Distance, Speed and Time Problems: Test Pack

A correct answer earns full marks unless the question asks for working, a method, proof or explanation.

Question 1

option C (150 km) cao **B1**

Answer: C) 150 km

Question 2

correct option E (26 km/h) cao **B1**

Answer: E) 26 km/h

Question 3

correct option C (40.5 km/h) cao **B1**

Answer: C) 40.5 km/h

Question 4

correct option B (63 km/h) cao **B1**

Answer: B) 63 km/h

Question 5

correct option B (65 km/h) cao **B1**

Answer: B) 65 km/h

Question 6

correct option A (6 km) cao **B1**

Answer: A) 6 km

Question 7

3 hours cao **B1**

Answer: 3 hours

Question 8

correct option A (47 km/h) cao **B1**

Answer: A) 47 km/h

Question 9

correct option E (22 km/h) cao **B1**

Answer: E) 22 km/h

Question 10

correct option E (26 km/h) cao **B1**

Answer: E) 26 km/h

Question 11

correct option E (72 km/h) cao **B1**

Answer: E) 72 km/h

Question 12

correct option C (21 km/h) cao **B1**

Answer: C) 21 km/h

Question 13

correct option E (52.8 km/h) cao **B1**

Answer: E) 52.8 km/h

Question 14

correct option A (46.4 km/h) cao **B1**

Answer: A) 46.4 km/h

Question 15

15 km/h cao **B1**

Answer: 15 km/h

Question 16

correct option C (12 km/h) cao **B1**

Answer: C) 12 km/h

Question 17

correct option A (10 km/h) cao **B1**

Answer: A) 10 km/h

Question 18

correct option E (60 km/h) cao **B1**

Answer: E) 60 km/h

Question 19

correct option A (40 km/h) cao **B1**

Answer: A) 40 km/h

Question 20

correct option E (27.6 km/h) cao **B1**

Answer: E) 27.6 km/h

Question 21

correct option E (46 km/h) cao **B1**

Answer: E) 46 km/h

Question 22

correct option C (35 km/h) cao **B1**

Answer: C) 35 km/h

Question 23

correct option D (48 km/h) cao **B1**

Answer: D) 48 km/h

Question 24

correct option D (6 km) cao **B1**

Answer: D) 6 km

Question 25

correct option D (40.5 km/h) cao **B1**

Answer: D) 40.5 km/h

Question 26

correct option E (30 km/h) cao **B1**

Answer: E) 30 km/h

Question 27

correct option A (8 km) cao **B1**

Answer: A) 8 km

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Question 28

correct option C (60 km) cao **B1**

Answer: C) 60 km

Question 29

correct option C (39.6 km/h) cao **B1**

Answer: C) 39.6 km/h

Question 30

correct option A (61.5 km/h) cao **B1**

Answer: A) 61.5 km/h

Question 31

correct option E (15 minutes) cao **B1**

Answer: E) 15 minutes

Question 32

correct option A (25 km) cao **B1**

Answer: A) 25 km

Question 33

correct option D (36 minutes) cao **B1**

Answer: D) 36 minutes

Question 34

correct option D (72 km/h) cao **B1**

Answer: D) 72 km/h

Question 35

correct option C (3 hours) cao **B1**

Answer: C) 3 hours

Question 36

correct option C (45 km) cao **B1**

Answer: C) 45 km

Question 37

correct option C (1 hour 15 minutes) cao **B1**

Answer: C) 1 hour 15 minutes

Question 38

time = distance/speed or 5/4 hours seen **M1**

1 hour 15 minutes (1.25 hours) cao **A1**

Answer: 1 hour 15 minutes

Question 39

correct option D (3 hours) cao **B1**

Answer: D) 3 hours

Question 40

correct option E (30 minutes) cao **B1**

Answer: E) 30 minutes

Question 41

conversion of 40 minutes to 40/60 = 2/3 hour or equivalent method **M1**

72 km/h cao **A1**

Answer: 72 km/h

Question 42

correct option B (40 km/h) cao **B1**

Answer: B) 40 km/h

Question 43

correct option C (16 km/h) cao **B1**

Answer: C) 16 km/h

Question 44

correct option E (28 km/h) cao **B1**

Answer: E) 28 km/h

Question 45

correct option D (24 km/h) cao **B1**

Answer: D) 24 km/h

Question 46

option C (2 hours 30 minutes) cao **B1**

Answer: C) 2 hours 30 minutes

Question 47

correct option D (28 km/h) cao **B1**

Answer: D) 28 km/h

Question 48

correct option C (29 km/h) cao **B1**

Answer: C) 29 km/h

Question 49

correct option D (54 km/h) cao **B1**

Answer: D) 54 km/h

Question 50

correct option C (10 km) cao **B1**

Answer: C) 10 km

Question 51

correct option A (2 hours 30 minutes) cao **B1**

Answer: A) 2 hours 30 minutes

Question 52

total time = 5/8 + 5/5 = 0.625 + 1 = 1.625 h or equivalent **M1**

average speed = 10/1.625 = 6.15 km/h (to 2 dp) cao **A1**

Answer: 6.15 km/h

Question 53

set up equation d/12 + d/8 = 5 or equivalent **M1**

solve: common denominator or multiply through to get 5d = 120 or equivalent **M1**

d = 24 km cao **A1**

Answer: 24 km

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Question 54

distance travelled by first car in first hour = 50 km or remaining distance 100 km seen **M1**

relative speed 50 + 60 = 110 km/h and time = 100/110 hours seen **M1**

meet at approximately 10:55 (10:55 to nearest minute) cao **A1**

Answer: Approximately 10:55 (closing gap of 100 km at 09:00 + 1 hour = 100 km remaining, combined speed 110 km/h, time = 100/110 h = 54.5 minutes, which rounds to 55 minutes after 10:00)

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