10.5 Reasoning Practice Paper: 2-hour Pack

Calculators not allowed · about 120 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 A lesson starts at 09:25 and ends at 11:31.

How many minutes does it take?

Answer: ___ minutes

(2)

---

2 Mateo has 3 boxes with 4,414 coins in each box and 28,365 loose coins.

How many coins does Mateo have altogether?

Answer: ___

(2)

---

3 Callum records the books read each week over 5 days: 17, 13, 14, 18, 13.

On the next day Callum does 25. What is the mean of all 6 days?

Answer: ___

(2)

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4 A rectangle has an area of 15 square millimetres. Its length is 5 mm.

What is its width?

Answer: ___ mm

Diagram NOT accurately drawn



(2)

---

5 Ella records the points scored in a game each round over 5 days: 14, 14, 12, 11, 14.

On the next day Ella does 23. What is the mean of all 6 days?

Answer: ___

(2)

---

6 Aaron, Ethan and Bella share 468 marbles in the ratio 7:4:7.

How many marbles does Bella get?

Answer: ___

(3)

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7 Lily and Poppy share 377 sweets in the ratio 6:7.

How many sweets does Poppy get?

Answer: ___

(2)

---

8 Grace pays a deposit of 20% on a kite that costs £200. The rest is paid later.

How much is paid later?

Answer: £___

(3)

---

9 In a class of 28 pupils, 18 like cheese, 11 like ham and 4 like both.

How many pupils like neither?

Answer: ___

(2)

---

10 The sum of 5 consecutive even numbers is 190.

What is the smallest of the 5 numbers?

Answer: ___

(2)

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11 Daisy records the minutes spent on homework each night over 3 days: 26, 26, 23.

On the next day Daisy does 31. What is the mean of all 4 days?

Answer: ___

(2)

---

12 5/8 of the stars in a jar is 60. How many stars are in the jar?

Answer: ___

(2)

---

13 Grace, Isla and Kiran share £112 in the ratio 5:2:7.

How much does Kiran get?

Answer: £___

(1)

---

14 Lily and Daisy share £243 in the ratio 4:5.

How much does Daisy get?

Answer: £___

(1)

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15 Mateo, Hana and Noah share £450 in the ratio 6:6:6.

How much does Noah get?

Answer: £___

(2)

---

16 Tom is 5 times as old as Nia. Together their ages add up to 78.

How old is Nia?

Answer: ___

(2)

---

17 A train leaves at 14:05 and takes 4 hours 26 minutes.

What time does it finish? Write your answer as a 24-hour clock time.

Answer: ___

(1)

---

18 Ravi has 5 boxes with 33,605 marbles in each box and 57,638 loose marbles.

How many marbles does Ravi have altogether?

Answer: ___

(2)

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19 A shop sells 2 pens for 76p and 5 pens for 84p.

Which pack is better value for money? Write the number of pens in the pack.

Answer: ___

(2)

20 Callum has 3,696 stickers. Callum is given 8,760 more and then gives away 9,717.

How many stickers does Callum have now?

Answer: ___

(2)

21 Kiran scored 16 out of 40 in a test.

Write this score as a percentage.

Answer: ___ %

(2)

22 The cost, C pounds, of hiring a bike for n hours is C = 7n + 17.

Work out C when n = 8.

Answer: £___

(2)

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23 Ali has 4 bags. Each bag holds 125 grams of sugar. How many kilograms of sugar does he have altogether?

(a) Find the total mass in kilograms. **(2)**

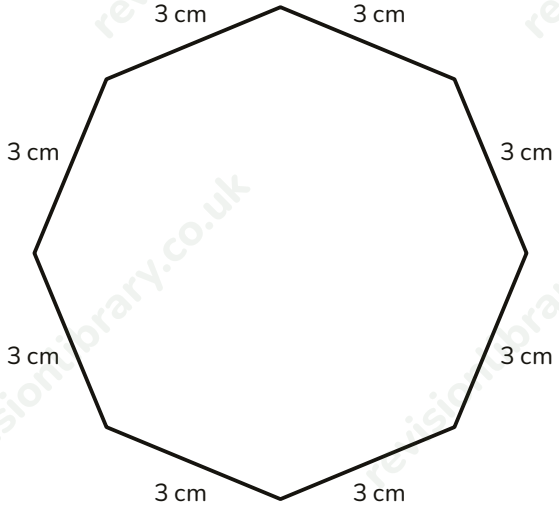
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24 A regular octagon has sides of length 3 cm.

What is its perimeter?

Answer: ___ cm

Diagram NOT accurately drawn



(1)

25 Grace is 5 times as old as Oscar. Together their ages add up to 54.

How old is Oscar?

Answer: ___

(2)

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26 Tom, Uma and Noah share £486 in the ratio 4:7:7.

How much does Noah get?

Answer: £___

(2)

---

27 The nth term of a sequence is 6n + 1.

What is the 10th term?

Answer: ___

(2)

---

28 The rule for a sequence is: start at 2 and add 8 each time. The 1st term is 2.

What is the 15th term?

Answer: ___

(2)

---

29 Each minibus has 38 seats. There are 316 children to carry.

What is the smallest number of minibuses needed?

Answer: ___

(2)

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30 Ella is 2 times as old as Lily. Together their ages add up to 12.

How old is Lily?

Answer: ___

(2)

---

31 Tom has 3 boxes with 8,797 beads in each box and 37,599 loose beads.

How many beads does Tom have altogether?

Answer: ___

(2)

---

32 In a sale, a bag costs £85. The price is reduced by 5%.

What is the sale price?

Answer: £___

(2)

---

33 Callum is 2 times as old as Ella. Together their ages add up to 36.

How old is Ella?

Answer: ___

(2)

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34 A rectangle has an area of 55 square millimetres. Its length is 5 mm.

What is its width?

Answer: ___ mm

Diagram NOT accurately drawn



(2)

35 I am thinking of a 3-digit number. Here are some clues.

Clue 1: It has an odd ones digit.
Clue 2: It has a digit sum of 17.
Clue 3: It has hundreds digit 5.
Clue 4: It is a multiple of 11.

What is my number?

Answer: ___

(2)

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36 The sum of 5 consecutive odd numbers is 315.

What is the smallest of the 5 numbers?

Answer: ___

(2)

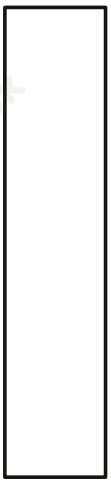
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37 A rectangle has an area of 42 square metres. Its length is 3 m.

What is its width?

Answer: ___ m

Diagram NOT accurately drawn



(2)

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38 Each coach has 40 seats. There are 362 pupils to carry.

What is the smallest number of coaches needed?

Answer: ___

(2)

---

39 Each taxi has 28 seats. There are 351 people to carry.

What is the smallest number of taxis needed?

Answer: ___

(2)

---

40 A shop sells 2 stickers for 64p and 6 stickers for 72p.

Which pack is better value for money? Write the number of stickers in the pack.

Answer: ___

(2)

---

41 In a class of 28 pupils, 8 like cheese, 14 like ham and 2 like both.

How many pupils like neither?

Answer: ___

(2)

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42 Sofia is 3 times as old as George. Together their ages add up to 56.

How old is George?

Answer: ___

(2)

---

43 Tom has 51,741 marbles. Tom is given 19,037 more and then gives away 29,113.

How many marbles does Tom have now?

Answer: ___

(2)

---

44 Noah has 8,896 cards. Noah is given 5,861 more and then gives away 10,539.

How many cards does Noah have now?

Answer: ___

(2)

---

45 Bella records the points scored in a game each round over 5 days: 13, 17, 19, 16, 15.

On the next day Bella does 26. What is the mean of all 6 days?

Answer: ___

(2)

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46 Ravi and Mia share 81 stamps in the ratio 4:5.

How many stamps does Ravi get?

Answer: ___

(2)

---

47 Each minibus has 21 seats. There are 360 children to carry.

What is the smallest number of minibuses needed?

Answer: ___

(2)

---

48 Hana and Amira share £30 in the ratio 2:3.

How much does Amira get?

Answer: £___

(1)

---

49 A shop sells 3 pens for 86p and 6 pens for 102p.

Which pack is better value for money? Write the number of pens in the pack.

Answer: ___

(2)

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Mark scheme · 10.5 Reasoning Practice Paper: 2-hour Pack

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

Question 1

counts on to the next hour or minutes calculation	M1
126 minutes cao	A1

Answer: **126 minutes**

Question 2

3 x 4,414 = 13,242 seen	M1
41,607 cao	A1

Answer: **41,607**

Question 3

total 100 seen	M1
16 2/3 or 50/3 cao (accept 16.7 or better)	A1

Answer: **16 2/3**

Question 4

divides area by length	M1
3 mm cao	A1

Answer: **3 mm**

Question 5

total 88 seen	M1
14 2/3 or 44/3 cao (accept 14.7 or better)	A1

Answer: **14 2/3**

Question 6

468 divided by 18 = 26 seen	M1
multiplies by their share	M1
182 cao	A1

Answer: **182**

Question 7

377 divided by 13 = 29 seen	M1
203 cao	A1

Answer: **203**

Question 8

deposit found	M1
subtraction	M1
£160 cao	A1

Answer: **£160**

Question 9

18 + 11 - 4 = 25 seen	M1
3 cao	A1

Answer: **3**

Question 10

uses the mean or tests numbers	M1
34 cao	A1

Answer: **34**

Question 11

total 106 seen	M1
26.5 cao	A1

Answer: **26.5**

Question 12

60 / 5 = 12 seen	M1
96 cao	A1

Answer: **96**

Question 13

£56 cao	B1

Answer: **£56**

Question 14

£135 cao	B1

Answer: **£135**

Question 15

450 divided by 18 = 25 seen	M1
£150 cao	A1

Answer: **£150**

Question 16

6 equal parts seen	M1
13 cao	A1

Answer: **13**

Question 17

18:31 cao	B1

Answer: **18:31**

Question 18

5 x 33,605 = 168,025 seen	M1
225,663 cao	A1

Answer: **225,663**

Question 19

finds the cost of one in each pack	M1
5 cao	A1

Answer: **5**

Question 20

12,456 seen	M1
2,739 cao	A1

Answer: **2,739**

Question 21

converts to a fraction out of 100	M1
40% cao	A1

Answer: **40%**

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Question 22

7 x 8 seen	M1
£73 cao	A1

Answer: **£73**

Question 23

(a) Shows 125 x 4 = 500 g	M1
(a) 0.5 kg cao	A1

(a) Answer: **0.5 kg**

Question 24

24 cm cao	B1

Answer: **24 cm**

Question 25

6 equal parts seen	M1
9 cao	A1

Answer: **9**

Question 26

486 divided by 18 = 27 seen	M1
£189 cao	A1

Answer: **£189**

Question 27

6 x 10 seen	M1
61 cao	A1

Answer: **61**

Question 28

14 steps of 8 seen	M1
114 cao	A1

Answer: **114**

Question 29

316 / 38 = 8 remainder 12 seen	M1
9 cao	A1

Answer: **9**

Question 30

3 equal parts seen	M1
4 cao	A1

Answer: **4**

Question 31

3 x 8,797 = 26,391 seen	M1
63,990 cao	A1

Answer: **63,990**

Question 32

reduction found	M1
£80.75 cao	A1

Answer: **£80.75**

Question 33

3 equal parts seen	M1
12 cao	A1

Answer: **12**

Question 34

divides area by length	M1
11 mm cao	A1

Answer: **11 mm**

Question 35

uses at least two conditions to cut down the list	M1
539 cao	A1

Answer: **539**

Question 36

uses the mean or tests numbers	M1
59 cao	A1

Answer: **59**

Question 37

divides area by length	M1
14 m cao	A1

Answer: **14 m**

Question 38

362 / 40 = 9 remainder 2 seen	M1
10 cao	A1

Answer: **10**

Question 39

351 / 28 = 12 remainder 15 seen	M1
13 cao	A1

Answer: **13**

Question 40

finds the cost of one in each pack	M1
6 cao	A1

Answer: **6**

Question 41

8 + 14 - 2 = 20 seen	M1
8 cao	A1

Answer: **8**

Question 42

4 equal parts seen	M1
14 cao	A1

Answer: **14**

Question 43

70,778 seen	M1
41,665 cao	A1

Answer: **41,665**

Question 44

14,757 seen	M1
4,218 cao	A1

Answer: **4,218**

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Question 45

total 106 seen	**M1**
17 2/3 or 53/3 cao (accept 17.7 or better)	**A1**

Answer: **17 2/3**

Question 46

81 divided by 9 seen	**M1**
36 cao	**A1**

Answer: **36**

Question 47

360 / 21 = 17 remainder 3 seen	**M1**
18 cao	**A1**

Answer: **18**

Question 48

£18 cao	**B1**

Answer: **£18**

Question 49

finds the cost of one in each pack	**M1**
6 cao	**A1**

Answer: **6**

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