1.8 Reasoning and Problem Solving (Year 4): 2-hour Pack

Total Marks

Calculators not allowed · about 120 minutes

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 Jade has 24 more marbles than Kofi. Together they have 84 marbles.

How many marbles does Kofi have?

Answer: ___

(2)

2 A lesson finishes at 23:03 after taking 4 hours 48 minutes.

What time did it start? Write your answer as a 24-hour clock time.

Answer: ___

(1)

3 Uma eats 4/8 of a bar of chocolate on Monday and 3/8 on Tuesday.

What fraction of the bar of chocolate is left? Give your answer in its simplest form.

Answer: ___

(2)

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4 Mateo has 2 boxes with 2,922 stickers in each box and 6,167 loose stickers.

How many stickers does Mateo have altogether?

Answer: ___

(2)

---

5 A ribbon is 4 m long. Layla cuts it into pieces that are each 25 cm long.

How many pieces does Layla cut?

Answer: ___

(2)

---

6 Isla has 4 more marbles than Ivan. Together they have 60 marbles.

How many marbles does Ivan have?

Answer: ___

(2)

---

7 Reece has 16 stamps. Reece gives 1/8 of them to a friend.

How many stamps does Reece give to the friend?

Answer: ___

(1)

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8 There are 8 rows of chairs with 7 chairs in each row. How many chairs are there?

Answer: ___

(1)

---

9 A baker uses 450 g of flour for 15 buns. How many grams of flour does he use for one bun?

(2)

---

10 Layla eats 5/12 of a ribbon on Monday and 5/12 on Tuesday.

What fraction of the ribbon is left? Give your answer in its simplest form.

Answer: ___

(2)

---

11 Freya has 7,513 beads. Freya is given 4,370 more and then gives away 5,330.

How many beads does Freya have now?

Answer: ___

(2)

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12 Hana buys 4 puzzles at £3 each and 5 scarves at £3.61 each. Hana pays with £35.

How much change does Hana get?

Answer: £___

(2)

---

13 Matchsticks are used to make a row of pentagons joined side by side. One pentagon uses 5 sticks and each extra pentagon added needs 4 more sticks.

How many sticks are needed for 12 pentagons?

Answer: ___

(2)

---

14 Daisy eats 4/9 of a cake on Monday and 2/9 on Tuesday.

What fraction of the cake is left? Give your answer in its simplest form.

Answer: ___

(2)

---

15 In a class of 25 pupils, 10 like cheese, 10 like ham and 8 like both.

How many pupils like neither?

Answer: ___

(2)

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16 Zara has 4 boxes with 4,090 beads in each box and 7,527 loose beads.

How many beads does Zara have altogether?

Answer: ___

(2)

---

17 A rectangle is 38 m long and 3 m wide.

What is its perimeter?

Answer: ___ m

(1)

---

18 A regular decagon has sides of length 20 cm.

What is its perimeter?

Answer: ___ cm

(2)

---

19 In a class of 21 pupils, 10 like cheese, 9 like ham and 7 like both.

How many pupils like neither?

Answer: ___

(2)

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20 In a class of 25 pupils, 17 like cheese, 6 like ham and 3 like both.

How many pupils like neither?

Answer: ___

(2)

---

21 A square has sides of length 29 cm.

What is its perimeter?

Answer: ___ cm

Diagram NOT accurately drawn



29 cm

(1)

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22 Zara has 25 stickers. Zara gives 1/5 of them to a friend.

How many stickers does Zara give to the friend?

Answer: ___

(2)

---

23 In a class of 30 pupils, 9 like football, 15 like netball and 8 like both.

How many pupils like neither?

Answer: ___

(2)

---

24 In a class of 32 pupils, 12 like cheese, 19 like ham and 2 like both.

How many pupils like neither?

Answer: ___

(2)

---

25 In a class of 20 pupils, 11 like cheese, 11 like ham and 8 like both.

How many pupils like neither?

Answer: ___

(2)

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26 A lesson finishes at 13:19 after taking 2 hours 30 minutes.

What time did it start? Write your answer as a 24-hour clock time.

Answer: ___

(2)

27 A shelf is 180 cm long. Emma places 5 identical books along the shelf with equal spaces between them and 10 cm at each end. What is the distance between each book (the equal space between books)? Ignore the thickness of the books.

(2)

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28 A train finishes at 18:16 after taking 1 hour 36 minutes.

What time did it start? Write your answer as a 24-hour clock time.

Answer: ___

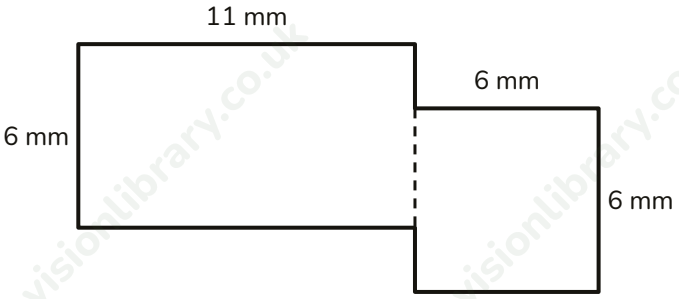
(2)

29 An L-shape is made from two rectangles joined together. The first rectangle is 11 mm by 6 mm. The second is 6 mm by 6 mm.

What is the total area of the L-shape in square millimetres?

Answer: ___

Diagram NOT accurately drawn



(2)

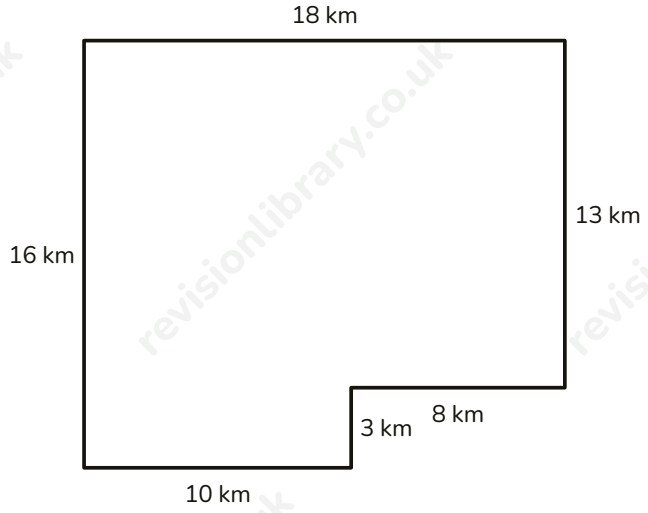
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30 An L-shaped floor has these sides in order around the shape: 18 km, 13 km, 8 km, 3 km, 10 km, 16 km.

What is the perimeter of the floor?

Answer: ___ km

Diagram NOT accurately drawn



(2)

---

31 In a class of 20 pupils, 12 like football, 10 like netball and 6 like both.

How many pupils like neither?

Answer: ___

(2)

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32 Bella has 13 more marbles than Tom. Together they have 71 marbles.

How many marbles does Tom have?

Answer: ___

(2)

---

33 Lily has 3 boxes with 805 stickers in each box and 5,028 loose stickers.

How many stickers does Lily have altogether?

Answer: ___

(2)

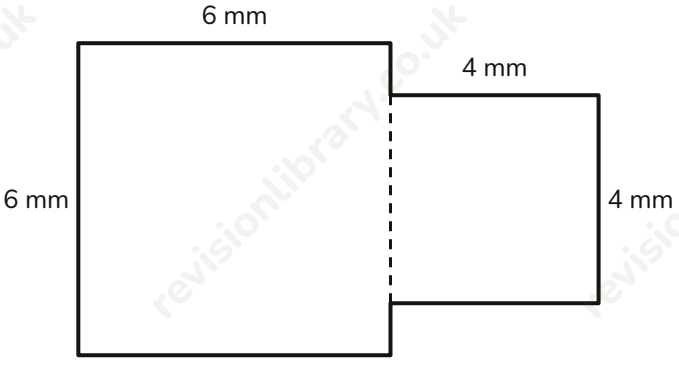
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34 An L-shape is made from two rectangles joined together. The first rectangle is 6 mm by 6 mm. The second is 4 mm by 4 mm.

What is the total area of the L-shape in square millimetres?

Answer: ___

Diagram NOT accurately drawn



(2)

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35 Grace buys 4 rulers at £2.03 each, 1 sandwich at £1.53 each and 1 comic at £1.98 each. Grace pays with £15.

How much change does Grace get?

Answer: £___

(3)

---

36 Ella buys 3 balloons at £2.09 each, 4 lollies at £3.36 each and 4 rulers at £1.18 each. Ella pays with £25.

How much change does Ella get?

Answer: £___

(3)

---

37 There are 48 children in a class. They are split into groups of 6 for an activity. After making the groups, 2 children join from another class. How many groups of 6 can be made now?

(2)

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38 Uma has 3,705 beads. Uma puts 2,745 aside and shares the rest equally between 6 friends.

How many beads does each friend get?

Answer: ___

(2)

---

39 Victor has 2 boxes with 3,969 beads in each box and 5,343 loose beads.

How many beads does Victor have altogether?

Answer: ___

(2)

---

40 Ivan has 7 more marbles than Oscar. Together they have 43 marbles.

How many marbles does Oscar have?

Answer: ___

(2)

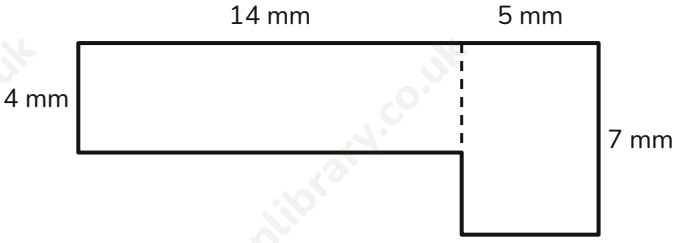
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41 An L-shape is made from two rectangles joined together. The first rectangle is 14 mm by 4 mm. The second is 5 mm by 7 mm.

What is the total area of the L-shape in square millimetres?

Answer: ___

Diagram NOT accurately drawn



(3)

---

42 Work out 5/6 of 12 kg.

Answer: ___

(1)

---

43 Aaron buys 5 packs of postcards. Each pack has 3 postcards. How many postcards does Aaron have?

Answer: ___

(1)

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44 Ivan has 9 boxes with 3,308 marbles in each box and 985 loose marbles.

How many marbles does Ivan have altogether?

Answer: ___

(2)

---

45 Reece has 5,110 beads. Reece puts 4,025 aside and shares the rest equally between 7 friends.

How many beads does each friend get?

Answer: ___

(2)

---

46 Uma has 3,194 marbles. Uma is given 1,970 more and then gives away 2,069.

How many marbles does Uma have now?

Answer: ___

(2)

---

47 A coach leaves at 15:47 and takes 2 hours 52 minutes.

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

Answer: ___

(1)

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48 A rectangle is 22 cm long and 2 cm wide.

What is its area in square centimetres?

Answer: ___

(1)

---

49 Uma buys 5 posters at £1.78 each and 4 notebooks at £1.75 each. Uma pays with £20.

How much change does Uma get?

Answer: £___

(2)

---

50 There are 12 rows of chairs with 10 chairs in each row. How many chairs are there?

Answer: ___

(1)

---

51 Amira has 5,902 stickers. Amira is given 4,111 more and then gives away 2,545.

How many stickers does Amira have now?

Answer: ___

(2)

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Mark scheme · 1.8 Reasoning and Problem Solving (Year 4): 2-hour Pack

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

Question 1

84 - 24 = 60 seen	M1
30 cao	A1

Answer: **30**

Question 2

18:15 cao	B1

Answer: **18:15**

Question 3

7/8 eaten seen	M1
1/8 cao	A1

Answer: **1/8**

Question 4

2 x 2,922 = 5,844 seen	M1
12,011 cao	A1

Answer: **12,011**

Question 5

4 m = 400 cm seen	M1
16 cao	A1

Answer: **16**

Question 6

60 - 4 = 56 seen	M1
28 cao	A1

Answer: **28**

Question 7

2 cao	B1

Answer: **2**

Question 8

56 cao	B1

Answer: **56**

Question 9

Division 450 ÷ 15 or grouping shown	M1
30 cao	B1

Answer: **30**

Question 10

10/12 eaten seen	M1
1/6 cao	A1

Answer: **1/6**

Question 11

11,883 seen	M1
6,553 cao	A1

Answer: **6,553**

Question 12

12.00 seen	M1
£4.95 cao	A1

Answer: **£4.95**

Question 13

11 extra shapes seen	M1
49 cao	A1

Answer: **49**

Question 14

6/9 eaten seen	M1
1/3 cao	A1

Answer: **1/3**

Question 15

10 + 10 - 8 = 12 seen	M1
13 cao	A1

Answer: **13**

Question 16

4 x 4,090 = 16,360 seen	M1
23,887 cao	A1

Answer: **23,887**

Question 17

82 m cao	B1

Answer: **82 m**

Question 18

10 x 20	M1
200 cm cao	A1

Answer: **200 cm**

Question 19

10 + 9 - 7 = 12 seen	M1
9 cao	A1

Answer: **9**

Question 20

17 + 6 - 3 = 20 seen	M1
5 cao	A1

Answer: **5**

Question 21

116 cm cao	B1

Answer: **116 cm**

Question 22

divides by the denominator	M1
5 cao	A1

Answer: **5**

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Question 23

9 + 15 - 8 = 16 seen	M1
14 cao	A1

Answer: **14**

Question 24

12 + 19 - 2 = 29 seen	M1
3 cao	A1

Answer: **3**

Question 25

11 + 11 - 8 = 14 seen	M1
6 cao	A1

Answer: **6**

Question 26

subtracts hours then minutes	M1
10:49 cao	A1

Answer: **10:49**

Question 27

Subtract end spaces (180 - 20 = 160) and divide by 4 gaps seen	M1
40 cm cao	B1

Answer: **40 cm**

Question 28

subtracts hours then minutes	M1
16:40 cao	A1

Answer: **16:40**

Question 29

finds the area of each rectangle	M1
102 square millimetres cao	A1

Answer: **102 square millimetres**

Question 30

adds all six sides	M1
68 km cao	A1

Answer: **68 km**

Question 31

12 + 10 - 6 = 16 seen	M1
4 cao	A1

Answer: **4**

Question 32

71 - 13 = 58 seen	M1
29 cao	A1

Answer: **29**

Question 33

3 x 805 = 2,415 seen	M1
7,443 cao	A1

Answer: **7,443**

Question 34

finds the area of each rectangle	M1
52 square millimetres cao	A1

Answer: **52 square millimetres**

Question 35

8.12 seen	M1
total 11.63 seen	M1
£3.37 cao	A1

Answer: **£3.37**

Question 36

6.27 seen	M1
total 24.43 seen	M1
£0.57 cao	A1

Answer: **£0.57**

Question 37

Add 2 to 48 to get 50 then divide by 6 seen	M1
8 remainder 2 or 8 full groups, but question asks how many groups of 6 can be made now: 8 cao	B1

Answer: **8**

Question 38

960 seen	M1
160 cao	A1

Answer: **160**

Question 39

2 x 3,969 = 7,938 seen	M1
13,281 cao	A1

Answer: **13,281**

Question 40

43 - 7 = 36 seen	M1
18 cao	A1

Answer: **18**

Question 41

finds the area of each rectangle	M1
adds the two areas	M1
91 square millimetres cao	A1

Answer: **91 square millimetres**

Question 42

10 kg cao	B1

Answer: **10 kg**

Question 43

15 cao	B1

Answer: **15**

Question 44

9 x 3,308 = 29,772 seen	M1
30,757 cao	A1

Answer: **30,757**

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Question 45

1,085 seen	M1
155 cao	A1

Answer: **155**

Question 46

5,164 seen	M1
3,095 cao	A1

Answer: **3,095**

Question 47

18:39 cao	B1

Answer: **18:39**

Question 48

44 square centimetres cao	B1

Answer: **44 square centimetres**

Question 49

8.90 seen	M1
£4.10 cao	A1

Answer: **£4.10**

Question 50

120 cao	B1

Answer: **120**

Question 51

10,013 seen	M1
7,468 cao	A1

Answer: **7,468**

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