1.6 Reasoning and Problem Solving (Year 3): 2-hour Pack

Total Marks

Calculators not allowed · about 120 minutes

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 A zoo had 684 visitors in May and 977 visitors in June.

How many visitors did it have altogether?

Answer: ___

(2)

---

2 Work out 5/10 of 110 kg.

Answer: ___

(1)

---

3 Yusuf has 19 more marbles than Bella. Together they have 57 marbles.

How many marbles does Bella have?

Answer: ___

(2)

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4 Sofia has 7 boxes with 393 coins in each box and 326 loose coins.

How many coins does Sofia have altogether?

Answer: ___

(2)

---

5 Kofi has 108 keyrings and puts 12 in each box. How many boxes are filled?

Answer: ___

(1)

---

6 In a class of 22 pupils, 16 like swimming, 6 like cycling and 2 like both.

How many pupils like neither?

Answer: ___

(2)

---

7 A lesson starts at 06:29 and ends at 08:19.

How many minutes does it take?

Answer: ___ minutes

(2)

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8 The bus leaves at 09:15 and the journey takes 1 hour 25 minutes. What time does the bus arrive?

(2)

---

9 Each box has 47 spaces. There are 253 eggs to carry.

What is the smallest number of boxes needed?

Answer: ___

(2)

---

10 A coach finishes at 19:31 after taking 4 hours 2 minutes.

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

Answer: ___

(2)

---

11 Victor has 2,840 cards. Victor puts 490 aside and shares the rest equally between 5 friends.

How many cards does each friend get?

Answer: ___

(2)

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12 Each taxi has 18 seats. There are 380 people to carry.

What is the smallest number of taxis needed?

Answer: ___

(2)

---

13 Mia has 22 more marbles than Reece. Together they have 94 marbles.

How many marbles does Reece have?

Answer: ___

(2)

---

14 Ethan has 12 more marbles than Bella. Together they have 72 marbles.

How many marbles does Bella have?

Answer: ___

(2)

---

15 Isla has a 6 m roll of wire. Isla uses 584 cm of it.

How many centimetres of wire are left?

Answer: ___ cm

(2)

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16 Noah has 3 boxes with 351 stickers in each box and 809 loose stickers.

How many stickers does Noah have altogether?

Answer: ___

(2)

---

17 Each taxi has 24 seats. There are 296 people to carry.

What is the smallest number of taxis needed?

Answer: ___

(2)

---

18 Reece eats 1/6 of a bar of chocolate on Monday and 2/6 on Tuesday.

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

Answer: ___

(2)

---

19 Willow buys 2 posters at £3.78 each and 3 kites at 96p each. Willow pays with £15.

How much change does Willow get?

Answer: £___

(2)

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20 Bella has 317 cards. Bella puts 191 aside and shares the rest equally between 3 friends.

How many cards does each friend get?

Answer: ___

(2)

---

21 Ravi buys 1 puzzle at £3.18 each and 1 bun at £3.52 each. Ravi pays with £10.

How much change does Ravi get?

Answer: £___

(2)

---

22 A museum had 901 visitors in May and 655 visitors in June.

How many visitors did it have altogether?

Answer: ___

(2)

---

23 Each box has 43 spaces. There are 121 eggs to carry.

What is the smallest number of boxes needed?

Answer: ___

(2)

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24 A stadium had 923 fans on Saturday and 948 fans on Sunday.

How many more fans came on the busier day?

Answer: ___

(2)

---

25 Yusuf shares 18 stickers equally between 3 friends. How many stickers does each friend get? Show your method.

(2)

---

26 Mia has 72 postcards and puts 9 in each box. How many boxes are filled?

Answer: ___

(1)

---

27 Dev has 3,892 marbles. Dev puts 388 aside and shares the rest equally between 6 friends.

How many marbles does each friend get?

Answer: ___

(2)

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28 Quinn has 6 boxes with 132 marbles in each box and 373 loose marbles.

How many marbles does Quinn have altogether?

Answer: ___

(2)

---

29 Each box has 37 spaces. There are 325 eggs to carry.

What is the smallest number of boxes needed?

Answer: ___

(2)

---

30 Work out 1/2 of 20 minutes.

Answer: ___

(1)

---

31 A film starts at 16:16 and takes 2 hours 53 minutes.

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

Answer: ___

(2)

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32 Aaron has 3,054 stickers. Aaron puts 126 aside and shares the rest equally between 8 friends.

How many stickers does each friend get?

Answer: ___

(2)

---

33 Work out 4/8 of £160.

Answer: ___

(1)

---

34 Uma buys 1 puzzle at £2.19 each and 3 buns at £3.17 each. Uma pays with £15.

How much change does Uma get?

Answer: £___

(2)

---

35 Kofi buys 5 balloons at £1.42 each, 1 T-shirt at £2.94 each and 3 kites at 91p each. Kofi pays with £15.

How much change does Kofi get?

Answer: £___

(3)

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36 Ivan has 4,330 marbles. Ivan puts 163 aside and shares the rest equally between 9 friends.

How many marbles does each friend get?

Answer: ___

(2)

---

37 Mateo has 25 more marbles than Aaron. Together they have 47 marbles.

How many marbles does Aaron have?

Answer: ___

(2)

---

38 Matchsticks are used to make a row of squares joined side by side. One square uses 4 sticks and each extra square added needs 3 more sticks.

How many sticks are needed for 8 squares?

Answer: ___

(2)

---

39 Each box has 28 spaces. There are 179 eggs to carry.

What is the smallest number of boxes needed?

Answer: ___

(2)

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40 Daisy buys 7 packs of stickers. Each pack has 6 stickers. How many stickers does Daisy have?

Answer: ___

(1)

---

41 Each minibus has 12 seats. There are 70 children to carry.

What is the smallest number of minibuses needed?

Answer: ___

(2)

---

42 Oliwia buys a sandwich for 95p and a drink for 60p. She pays with a £2 coin. How much change should she get?

(2)

---

43 Callum has a 4 m roll of wire. Callum uses 267 cm of it.

How many centimetres of wire are left?

Answer: ___ cm

(2)

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44 Ethan has 1,109 beads. Ethan puts 377 aside and shares the rest equally between 3 friends.

How many beads does each friend get?

Answer: ___

(2)

---

45 Willow buys 2 posters at 74p each, 4 notebooks at £3.26 each and 1 lolly at £1.82 each. Willow pays with £20.

How much change does Willow get?

Answer: £___

(3)

---

46 Victor has 8 boxes with 470 coins in each box and 100 loose coins.

How many coins does Victor have altogether?

Answer: ___

(2)

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47 A museum had 997 visitors on Saturday and 846 visitors on Sunday.

How many more visitors came on the busier day?

Answer: ___

(2)

---

48 A lesson starts at 11:02 and takes 47 minutes.

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

Answer: ___

(1)

---

49 Mia has 12 more marbles than Dev. Together they have 48 marbles.

How many marbles does Dev have?

Answer: ___

(2)

---

50 Ethan buys 4 T-shirts at 45p each, 3 sandwiches at £1.50 each and 5 lollies at £2.49 each. Ethan pays with £20.

How much change does Ethan get?

Answer: £___

(3)

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Mark scheme · 1.6 Reasoning and Problem Solving (Year 3): 2-hour Pack

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

Question 1

addition method seen	M1
1,661 cao	A1

Answer: **1,661**

Question 2

55 kg cao	B1

Answer: **55 kg**

Question 3

57 - 19 = 38 seen	M1
19 cao	A1

Answer: **19**

Question 4

7 x 393 = 2,751 seen	M1
3,077 cao	A1

Answer: **3,077**

Question 5

9 cao	B1

Answer: **9**

Question 6

16 + 6 - 2 = 20 seen	M1
2 cao	A1

Answer: **2**

Question 7

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

Answer: **110 minutes**

Question 8

Correct addition of hours and minutes, e.g. 09:15 + 1:25 shown	M1
10:40 cao	B1

Answer: **10:40**

Question 9

253 / 47 = 5 remainder 18 seen	M1
6 cao	A1

Answer: **6**

Question 10

subtracts hours then minutes	M1
15:29 cao	A1

Answer: **15:29**

Question 11

2,350 seen	M1
470 cao	A1

Answer: **470**

Question 12

380 / 18 = 21 remainder 2 seen	M1
22 cao	A1

Answer: **22**

Question 13

94 - 22 = 72 seen	M1
36 cao	A1

Answer: **36**

Question 14

72 - 12 = 60 seen	M1
30 cao	A1

Answer: **30**

Question 15

6 m = 600 cm seen	M1
16 cm cao	A1

Answer: **16 cm**

Question 16

3 x 351 = 1,053 seen	M1
1,862 cao	A1

Answer: **1,862**

Question 17

296 / 24 = 12 remainder 8 seen	M1
13 cao	A1

Answer: **13**

Question 18

3/6 eaten seen	M1
1/2 cao	A1

Answer: **1/2**

Question 19

7.56 seen	M1
£4.56 cao	A1

Answer: **£4.56**

Question 20

126 seen	M1
42 cao	A1

Answer: **42**

Question 21

3.18 seen	M1
£3.30 cao	A1

Answer: **£3.30**

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Question 22

addition method seen	M1
1,556 cao	A1

Answer: **1,556**

Question 23

121 / 43 = 2 remainder 35 seen	M1
3 cao	A1

Answer: **3**

Question 24

subtraction method seen	M1
25 cao	A1

Answer: **25**

Question 25

Correct division or grouping shown, e.g. 18 ÷ 3 = 6 or 3 groups of 6	M1
6 cao	B1

Answer: **6**

Question 26

8 cao	B1

Answer: **8**

Question 27

3,504 seen	M1
584 cao	A1

Answer: **584**

Question 28

6 x 132 = 792 seen	M1
1,165 cao	A1

Answer: **1,165**

Question 29

325 / 37 = 8 remainder 29 seen	M1
9 cao	A1

Answer: **9**

Question 30

10 minutes cao	B1

Answer: **10 minutes**

Question 31

adds hours then minutes	M1
19:09 cao	A1

Answer: **19:09**

Question 32

2,928 seen	M1
366 cao	A1

Answer: **366**

Question 33

£80 cao	B1

Answer: **£80**

Question 34

2.19 seen	M1
£3.30 cao	A1

Answer: **£3.30**

Question 35

7.10 seen	M1
total 12.77 seen	M1
£2.23 cao	A1

Answer: **£2.23**

Question 36

4,167 seen	M1
463 cao	A1

Answer: **463**

Question 37

47 - 25 = 22 seen	M1
11 cao	A1

Answer: **11**

Question 38

7 extra shapes seen	M1
25 cao	A1

Answer: **25**

Question 39

179 / 28 = 6 remainder 11 seen	M1
7 cao	A1

Answer: **7**

Question 40

42 cao	B1

Answer: **42**

Question 41

70 / 12 = 5 remainder 10 seen	M1
6 cao	A1

Answer: **6**

Question 42

Correct total cost calculated, e.g. 95p + 60p = 155p or £1.55	M1
45p cao	B1

Answer: **45p**

Question 43

4 m = 400 cm seen	M1
133 cm cao	A1

Answer: **133 cm**

Question 44

732 seen	M1
244 cao	A1

Answer: **244**

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Question 45

1.48 seen	M1
total 16.34 seen	M1
£3.66 cao	A1

Answer: **£3.66**

Question 46

8 x 470 = 3,760 seen	M1
3,860 cao	A1

Answer: **3,860**

Question 47

subtraction method seen	M1
151 cao	A1

Answer: **151**

Question 48

11:49 cao	B1

Answer: **11:49**

Question 49

48 - 12 = 36 seen	M1
18 cao	A1

Answer: **18**

Question 50

1.80 seen	M1
total 18.75 seen	M1
£1.25 cao	A1

Answer: **£1.25**

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