# 1.3 Problem Solving Skills Pack: 2-hour Pack

NATIONAL CURRICULUM KS2 National Curriculum Mathematics - Problem Solving Skills Framework · Calculators not allowed · about 120 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

**Answer ALL questions. Show all your working.**

**1** 4/6 of the beads in a jar is 44. How many beads are in the jar?

Answer: ___

**(2)**

---

**2** Ravi eats 5/12 of a ribbon on Monday and 3/12 on Tuesday.

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

Answer: ___

**(2)**

---

**3** Hassan has 13 more marbles than George. Together they have 45 marbles.

How many marbles does George have?

Answer: ___

**(2)**


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**4** Aaron is 4 times as old as Lily. Together their ages add up to 55.

How old is Lily?

Answer: ___

**(2)**

---

**5** Lily buys 1 poster at £1.62 each, 2 balloons at 54p each and 5 puzzles at 35p each. Lily pays with £5.

How much change does Lily get?

Answer: £___

**(3)**

---

**6** Use each of the digits 3, 8, 1, 6 once to make the largest possible 4-digit number.

Answer: ___

**(1)**

---

**7** Nia and Victor share some money in the ratio 3:5. The difference between their shares is £8.

How much money is shared altogether?

Answer: £___

**(2)**


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**8** The sum of 5 consecutive even numbers is 170.

What is the smallest of the 5 numbers?

Answer: ___

**(2)**

---

**9** a and b are positive whole numbers. a + b = 20 and a x b is less than 140.

How many pairs (a, b) with a smaller than b satisfy both conditions?

Answer: ___

**(3)**

---

**10** Each tray has 8 spaces. There are 271 cakes to carry.

What is the smallest number of trays needed?

Answer: ___

**(2)**

---

**11** In a class of 39 pupils, 11 like cheese, 33 like ham and 8 like both.

How many pupils like neither?

Answer: ___

**(2)**


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**12** Oscar and Sofia share some money in the ratio 3:4. The difference between their shares is £2.

How much money is shared altogether?

Answer: £___

**(2)**

---

**13** Use each of the digits 5, 6, 2, 7 once to make the largest possible 4-digit number.

Answer: ___

**(1)**

---

**14** There are 360 pupils in Oakfield Primary School. 2/5 of the pupils walk to school. Work out how many pupils walk to school.

360 pupils; shaded: walk to school; unshaded: do not walk to school



**(3)**


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**15** Two whole numbers have a sum of 21 and a product of 108.

What are the two numbers? Write the smaller one first.

Answer: ___ and ___

**(2)**

---

**16** The sum of 5 consecutive even numbers is 110.

What is the smallest of the 5 numbers?

Answer: ___

**(2)**

---

**17** In a class of 21 pupils, 11 like cheese, 7 like ham and 5 like both.

How many pupils like neither?

Answer: ___

**(2)**

---

**18** Use each of the digits 6, 1, 3, 4 once to make the largest possible 4-digit number.

Answer: ___

**(2)**


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**19** Priya buys 5 puzzles at £3.25 each, 4 posters at £3.78 each and 5 T-shirts at 93p each. Priya pays with £40.

How much change does Priya get?

Answer: £___

**(3)**

---

**20** A coach finishes at 23:26 after taking 3 hours 39 minutes.

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

Answer: ___

**(2)**

---

**21** Uma has 11 more marbles than Willow. Together they have 69 marbles.

How many marbles does Willow have?

Answer: ___

**(2)**


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**22** Each coach has 21 seats. There are 389 pupils to carry.

What is the smallest number of coaches needed?

Answer: ___

**(2)**

---

**23** 5/6 of the toy cars in a jar is 65. How many toy cars are in the jar?

Answer: ___

**(2)**

---

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

Clue 1: It has hundreds digit 3.
Clue 2: It has a digit sum of 6.
Clue 3: It is a multiple of 4.

What is my number?

Answer: ___

**(2)**


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**25** Ella has 7 boxes with 1,967 beads in each box and 2,513 loose beads.

How many beads does Ella have altogether?

Answer: ___

**(2)**

---

**26** Willow has 24 more marbles than Ivan. Together they have 88 marbles.

How many marbles does Ivan have?

Answer: ___

**(2)**

---

**27** 6/8 of the pencils in a jar is 42. How many pencils are in the jar?

Answer: ___

**(2)**

---

**28** A train finishes at 23:57 after taking 4 hours 49 minutes.

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

Answer: ___

**(2)**


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**29** a and b are positive whole numbers. a + b = 11 and a x b is less than 33.

How many pairs (a, b) with a smaller than b satisfy both conditions?

Answer: ___

**(3)**

---

**30** Mateo has 4,185 stickers. Mateo puts 2,826 aside and shares the rest equally between 3 friends.

How many stickers does each friend get?

Answer: ___

**(2)**

---

**31** Kwame goes to the school shop with a £10 note. He buys 3 pens at 45p each and 2 notebooks at £1.60 each. Work out how much change he receives.

**(4)**

---

**32** Each minibus has 48 seats. There are 126 children to carry.

What is the smallest number of minibuses needed?

Answer: ___

**(2)**


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**33** A shop sells 4 pens for 46p and 10 pens for 183p.

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

Answer: ___

(2)

---

**34** Hassan buys 4 notebooks at £3.85 each and 2 sandwiches at £1.49 each. Hassan pays with £20.

How much change does Hassan get?

Answer: £___

(2)

---

**35** Ben eats 1/12 of a pie on Monday and 1/12 on Tuesday.

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

Answer: ___

(2)


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

Clue 1: It has hundreds digit 6.
Clue 2: It has an odd ones digit.
Clue 3: It has a digit sum of 8.

What is my number?

Answer: ___

**(2)**

---

**37** The sum of 4 consecutive even numbers is 44.

What is the smallest of the 4 numbers?

Answer: ___

**(2)**

---

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

Clue 1: It has a digit sum of 20.
Clue 2: It has an odd ones digit.
Clue 3: It has hundreds digit 2.

What is my number?

Answer: ___

**(2)**


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**39** Chloe buys 1 T-shirt at £2.55 each, 2 scarves at 66p each and 3 kites at £2.08 each. Chloe pays with £15.

How much change does Chloe get?

Answer: £___

**(3)**

---

**40** Uma is 2 times as old as Noah. Together their ages add up to 21.

How old is Noah?

Answer: ___

**(2)**

---

**41** Victor is 3 times as old as Yusuf. Together their ages add up to 16.

How old is Yusuf?

Answer: ___

**(2)**


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**42** Layla and Zara share some money in the ratio 5:1. The difference between their shares is £44.

How much money is shared altogether?

Answer: £___

**(2)**

---

**43** Priya has 6 more marbles than Olu. Together they have 62 marbles.

How many marbles does Olu have?

Answer: ___

**(2)**

---

**44** Isla is 2 times as old as Tom. Together their ages add up to 33.

How old is Tom?

Answer: ___

**(2)**


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# Mark scheme · 1.3 Problem Solving Skills Pack: 2-hour Pack

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

### Question 1

| | |
|---|---|
| 44 / 4 = 11 seen | M1 |
| 66 cao | A1 |

Answer: **66**

### Question 2

| | |
|---|---|
| 8/12 eaten seen | M1 |
| 1/3 cao | A1 |

Answer: **1/3**

### Question 3

| | |
|---|---|
| 45 - 13 = 32 seen | M1 |
| 16 cao | A1 |

Answer: **16**

### Question 4

| | |
|---|---|
| 5 equal parts seen | M1 |
| 11 cao | A1 |

Answer: **11**

### Question 5

| | |
|---|---|
| 1.62 seen | M1 |
| total 4.45 seen | M1 |
| £0.55 cao | A1 |

Answer: **£0.55**

### Question 6

| | |
|---|---|
| 8,631 cao | B1 |

Answer: **8,631**

### Question 7

| | |
|---|---|
| 2 parts = £8 so 1 part = £4 seen | M1 |
| £32 cao | A1 |

Answer: **£32**

### Question 8

| | |
|---|---|
| uses the mean or tests numbers | M1 |
| 30 cao | A1 |

Answer: **30**

### Question 9

| | |
|---|---|
| lists the pairs | M1 |
| tests the product | M1 |
| 9 cao | A1 |

Answer: **9**

### Question 10

| | |
|---|---|
| 271 / 8 = 33 remainder 7 seen | M1 |
| 34 cao | A1 |

Answer: **34**

### Question 11

| | |
|---|---|
| 11 + 33 - 8 = 36 seen | M1 |
| 3 cao | A1 |

Answer: **3**

### Question 12

| | |
|---|---|
| 1 parts = £2 so 1 part = £2 seen | M1 |
| £14 cao | A1 |

Answer: **£14**

### Question 13

| | |
|---|---|
| 7,652 cao | B1 |

Answer: **7,652**

### Question 14

| | |
|---|---|
| 360 / 5 = 72 (finds one fifth) oe | M1 |
| 72 x 2 oe | M1 |
| 144 cao | A1 |

Answer: **144 pupils**

### Question 15

| | |
|---|---|
| tests pairs that add to the sum | M1 |
| 9 and 12 cao | A1 |

Answer: **9 and 12**

### Question 16

| | |
|---|---|
| uses the mean or tests numbers | M1 |
| 18 cao | A1 |

Answer: **18**

### Question 17

| | |
|---|---|
| 11 + 7 - 5 = 13 seen | M1 |
| 8 cao | A1 |

Answer: **8**

### Question 18

| | |
|---|---|
| digits placed in value order | M1 |
| 6,431 cao | A1 |

Answer: **6,431**

### Question 19

| | |
|---|---|
| 16.25 seen | M1 |
| total 36.02 seen | M1 |
| £3.98 cao | A1 |

Answer: **£3.98**

### Question 20

| | |
|---|---|
| subtracts hours then minutes | M1 |
| 19:47 cao | A1 |

Answer: **19:47**

### Question 21

| | |
|---|---|
| 69 - 11 = 58 seen | M1 |
| 29 cao | A1 |

Answer: **29**


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## Question 22

| | |
|---|---|
| 389 / 21 = 18 remainder 11 seen | M1 |
| 19 cao | A1 |

Answer: **19**

## Question 23

| | |
|---|---|
| 65 / 5 = 13 seen | M1 |
| 78 cao | A1 |

Answer: **78**

## Question 24

| | |
|---|---|
| uses at least two conditions to cut down the list | M1 |
| 312 cao | A1 |

Answer: **312**

## Question 25

| | |
|---|---|
| 7 x 1,967 = 13,769 seen | M1 |
| 16,282 cao | A1 |

Answer: **16,282**

## Question 26

| | |
|---|---|
| 88 - 24 = 64 seen | M1 |
| 32 cao | A1 |

Answer: **32**

## Question 27

| | |
|---|---|
| 42 / 6 = 7 seen | M1 |
| 56 cao | A1 |

Answer: **56**

## Question 28

| | |
|---|---|
| subtracts hours then minutes | M1 |
| 19:08 cao | A1 |

Answer: **19:08**

## Question 29

| | |
|---|---|
| lists the pairs | M1 |
| tests the product | M1 |
| 5 cao | A1 |

Answer: **5**

## Question 30

| | |
|---|---|
| 1,359 seen | M1 |
| 453 cao | A1 |

Answer: **453**

## Question 31

| | |
|---|---|
| 3 x 0.45 = 1.35 (cost of pens) oe | M1 |
| 2 x 1.60 = 3.20 (cost of notebooks) oe | M1 |
| 1.35 + 3.20 = 4.55 (total spent) oe ft | M1 |
| £5.45 cao | A1 |

Answer: **£5.45**

## Question 32

| | |
|---|---|
| 126 / 48 = 2 remainder 30 seen | M1 |
| 3 cao | A1 |

Answer: **3**

## Question 33

| | |
|---|---|
| finds the cost of one in each pack | M1 |
| 4 cao | A1 |

Answer: **4**

## Question 34

| | |
|---|---|
| 15.40 seen | M1 |
| £1.62 cao | A1 |

Answer: **£1.62**

## Question 35

| | |
|---|---|
| 2/12 eaten seen | M1 |
| 5/6 cao | A1 |

Answer: **5/6**

## Question 36

| | |
|---|---|
| uses at least two conditions to cut down the list | M1 |
| 611 cao | A1 |

Answer: **611**

## Question 37

| | |
|---|---|
| uses the mean or tests numbers | M1 |
| 8 cao | A1 |

Answer: **8**

## Question 38

| | |
|---|---|
| uses at least two conditions to cut down the list | M1 |
| 299 cao | A1 |

Answer: **299**

## Question 39

| | |
|---|---|
| 2.55 seen | M1 |
| total 10.11 seen | M1 |
| £4.89 cao | A1 |

Answer: **£4.89**

## Question 40

| | |
|---|---|
| 3 equal parts seen | M1 |
| 7 cao | A1 |

Answer: **7**

## Question 41

| | |
|---|---|
| 4 equal parts seen | M1 |
| 4 cao | A1 |

Answer: **4**

## Question 42

| | |
|---|---|
| 4 parts = £44 so 1 part = £11 seen | M1 |
| £66 cao | A1 |

Answer: **£66**

## Question 43

| | |
|---|---|
| 62 - 6 = 56 seen | M1 |
| 28 cao | A1 |

Answer: **28**


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## Question 44

| | |
|---|---|
| 3 equal parts seen | **M1** |
| 11 cao | **A1** |

Answer: **11**


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