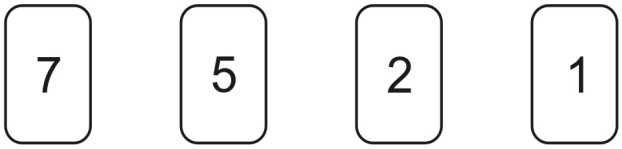
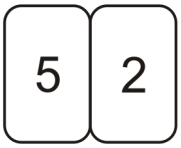
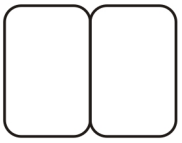
1. Here are four digit cards.

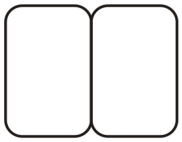


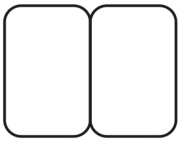
Choose two cards each time to make the following two-digit numbers.

The first one is done for you.

an even number 

a multiple of 9 

a square number 

a factor of 96 

2 marks

2. Complete this sentence.

Every number with a factor of **10** must also have factors of

1 mark

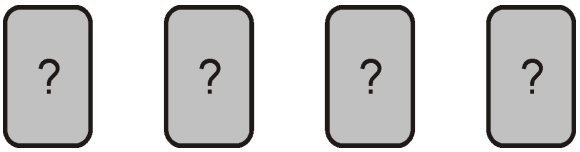
3. Write **all** the numbers between 50 and 100 that are **factors of 180**

.....

2 marks

4. Debbie has a pack of cards numbered from 1 to 20

She picks four different number cards.

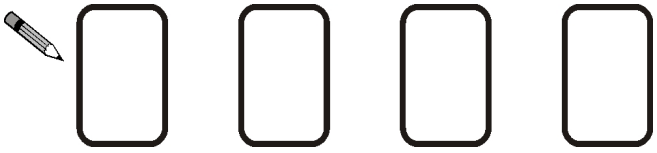


Exactly three of the four numbers are multiples of 5

Exactly three of the four numbers are even numbers.

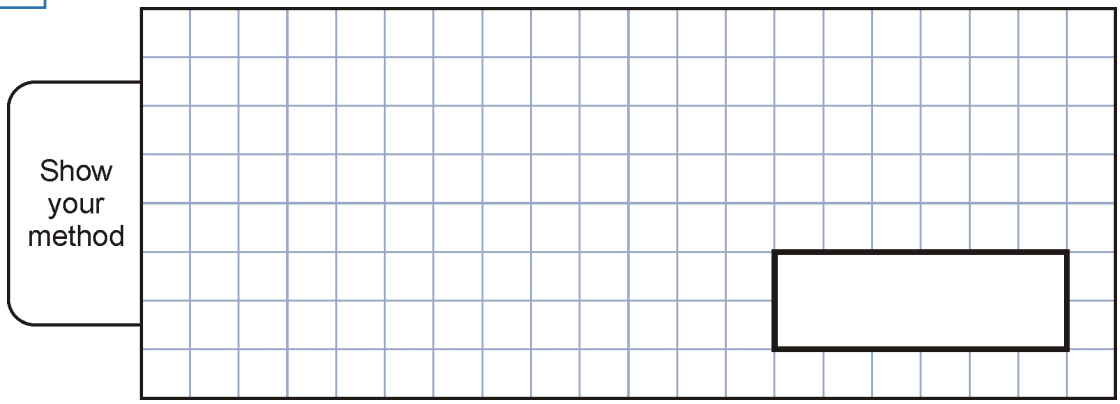
All four of the numbers add up to less than 40

Write what the numbers could be.



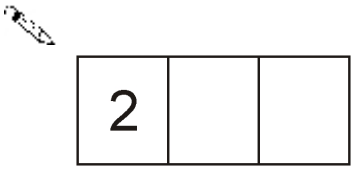
1 mark

5. Find the multiple of 45 that is closest to 8000



2 marks

6. Complete this **three-digit** number so that it is a **multiple of 9.**



1 mark

7. Here is a number chart.

Every third number in the chart has a circle on it.

1	2	(3)	4	5
(6)	7	8	(9)	10
11	(12)	13	14	(15)
16	17	(18)	19	20
(21)	22			

The chart continues in the same way.

Here is another row in the chart.

Draw the missing circles.

71	72	73	74	75

1 mark

Will the number **1003** have a circle on it?
Circle **Yes** or **No**.

Yes / No

Explain how you know.

1 mark

8. 364 is a multiple of 7 but not a multiple of 3.

384 is a multiple of 3 but not a multiple of 7.

Find a number between 364 and 384 that is **both** a multiple of 7 **and** a multiple of 3.

Show your method

2 marks

9. This three-digit number has **2** and **7** as **factors**.

2 9 4

Write another **three-digit** number which has **2** and **7** as **factors**.

1 mark

Mark schemes

1. Award **TWO** marks for all three numbers correct as shown:

- a multiple of 9 | 2 | 7 | **OR** | 7 | 2 |
- a square number | 2 | 5 |
- a factor of 96 | 1 | 2 |

If the answer is incorrect, award **ONE** mark for two numbers correct.

Up to 2

[2]

2. 1, 2 and 5

Numbers may be given in any order.

[1]

3. Award **TWO** marks for the correct answer of 60 **AND** 90

Numbers may be given in either order.

If the answer is incorrect, award **ONE** mark for:

- both numbers correct and one or more additional factors of 180

eg 30, 45, 60, 90

OR

- both numbers correct and one number which is not a factor of 180

eg 60, 90, 100

OR

- one number correct and none incorrect.

eg 60

Up to 2

[2]

4. 2 5 10 20

OR

4 5 10 20

Accept the four numbers listed in any order.

U1

[1]

5. Award **TWO** marks for the correct answer of 8010

If the answer is incorrect, award **ONE** mark for evidence of appropriate method, eg:

- 8000 ÷ 45 = wrong number
  then wrong number rounded to the nearest whole number

  *Accept 178 for **TWO** marks*

  *Accept for **ONE** mark 7965 **OR** 177 as evidence of appropriate method*

OR

- a 'trial and improvement' method, eg
  150 × 45 = 6750
  200 × 45 = 9000
  175 × 45 = 7875

  A 'trial and improvement' method must show evidence of improvement.

  *Answer need not be obtained for the award of **ONE** mark.*

Up to 2

[2]

6. Any three-digit number that is a multiple of 9,eg:

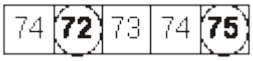
207

If correct, the sum of the digits will be 9 or 18.

If boxes are blank, accept answer elsewhere on the page.

[1]

7. Two numbers circled as shown:



1

An explanation which recognises that 1003 is not a multiple of 3, eg:

- 'Because 1003 is not divisible by 3'
- 'Because 1003 is not a multiple of 3'
- 'Because 1003 is not in the 3 times table'
- 'Because I divided 1003 by 3 and there was a remainder'
- 'Because 1003 + 3 has a decimal answer'
- 'Because 1 + 0 + 0 + 3 = 4, and 4 is not a multiple of 3'
- 'Because 1003 has a digital sum of 4'
- 'Because 1002 is the nearest in the 3 times table'
- 'Because 1000 is not divisible by 3'
- 'Because 999 is divisible by 3'.

__Do not__ award the mark if additional incorrect numbers are circled.

Accept alternative unambiguous indications, eg ticks, crosses.

No mark is awarded for circling 'No' alone.

__Do not__ accept vague or arbitrary explanations, eg:

- *'Because 1003 ends in 3'*
- *'Because 1003 is in the third column'*
- *'Because if you keep going in 3s you will go past it'.*

If 'Yes' is circled but a correct unambiguous explanation is given, then award the mark.

U1

[2]

8. Award **TWO** marks for the correct answer of 378

If the answer is incorrect, award **ONE** mark for evidence of an appropriate method, eg:

- 366 369 372 375 378 381

  364 371 378 385

OR

- Factorisation/calculator method, eg

  $7 \times 3 = 21$

  21×18

  *Answer need not be obtained for the award of **ONE** mark.*

Up to 2
U1

[2]

9. Any 3-difit number that is a multiple of 14, eg:

3	0	8

Any acceptable answers will be even numbers which divide by 7
***Do not** accept '0' in the hundreds box.*
*Only **three digit** numbers are acceptable.*

[1]