



Place Value, Integers, Ordering and Rounding

Age 11+ Level ★ Worksheet 1

1. Mathematical Ages

Here are the dates of three pivotal female mathematicians:

Sophie Germain (French) 1776-1831

Sonja Kowalevsky (Russian) 1850-91

Emmy Noether (German) 1882-1935

Arrange them in order with the shortest-lived first.

2. Different Magic Square

In a magic square, the three numbers in each row, in each column, and in each diagonal add up to the same number.

13		
	10	
9		7

Complete this magic square.

3. Quiz Questions

A quiz has twenty questions with 7 points awarded for each correct answer, 2 points deducted for each wrong answer and 0 for each question omitted.

Jack scored 87 points.

How many questions did he omit?

4. Debt Recovery

Tony owes Tina 40p.

Then Tina borrows 50p from Tony.

Later Tony gives Tina 60p.

Who has to pay what to whom to square things up?

5. Loose Change

In how many ways can you give change for a ten pence piece?

(You can use 1p, 2p and 5p coins when giving change)

These problems are adapted from UKMT (ukmt.org.uk) and WMC (competition.ac) problems.



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Age 11+ Level ★ Worksheet 2

1. Highs and Lows

I have a maximum/minimum thermometer in my greenhouse.
It records both the highest and the lowest temperatures reached from the time I reset it.

I reset it on Sunday when the temperature was 4°C .
Overnight the temperature fell 5° .
Then during Monday it rose by 6° before falling 10° during the night.
On Tuesday it rose by 4° and fell by 2° overnight.

What were the maximum and minimum temperatures recorded when I looked at the thermometer on Wednesday morning?

2. Central Sum

In how many whole numbers between 100 and 999 is the middle digit equal to the sum of the other two digits?

3. Mini Kakuro

Use seven of the digits from 1 to 9 to fill in each unshaded square, so that no digit is repeated, and the totals of the entries in the rows and columns are as shown.

			Total
			12
			7
	*		13
Total	4	16	12

What number goes in the starred square?

4. Reverse Ages

On Brian's 14th birthday, his father was 41.
Brian noticed that his age was the reverse of his father's age.

How old will Brian be the next time his age is the reverse of his father's age?

5. Count Back

What number is twenty-one less than sixty thousand?

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