

Maths Investigations

Four Integers

1. Using four different integers and the \times symbol make the highest possible result.

All the integers have to be used.

For example: 3, 7, 5, 1 gives $157 \times 3 = 471$ or $37 \times 51 = 1887$.

2. Now choose four other integers and make the largest result using only multiplication.

3. What conclusions can you make?

4. What predictions can you make about 5, 6, ... digits?

1, 2, 3, 4

Using the digits 1, 2, 3 and 4 and $+$, $-$, \times and \div symbols make the numbers from 1 to 30.

Each of the numbers has to be used every time, for example $1 + 2 + 3 + 4 = 10$.

Creepy Crawlies

Ross collects lizards, beetles and worms. He has more worms than lizards and beetles together. Altogether in the collection there are twelve heads and twenty-six legs. How many lizards does Ross have?

Zios and Zepts

On the planet Vuv there are two sorts of creatures. The Zios have 3 legs and the Zepts have 7 legs.

The great planetary explorer Nico, who first discovered the planet, saw a crowd of Zios and Zepts. He managed to see that there was more than one of each kind of creature before they saw him. Suddenly they all rolled over onto their backs and put their legs in the air.

He counted 52 legs. How many Zios and how many Zepts were there?

(To see this problem click on the link: NRICH <http://nrich.maths.org/1005>)

Chicken and Sheep

A farmer looks across a field of chicken and sheep. He counts 26 heads and 74 legs. How many chickens and sheep does he have?

Try to represent this problem in different ways: pictures, models, cubes, graphs, algebra, using 26 children, etc...