Sums. The're Math Magic

16 – Sum Logic

Please go through each slide stopping until you have understood the concept described

The Ships Ladder

It is low tide.

You have a rope ladder running down the side of the ship.

The ladder just touches the water.

If the tide rises 3M and nobody adjusts the ladder.

How much of the ladder will be under water?

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The ladder rises with the ship so nothing is below the water line!

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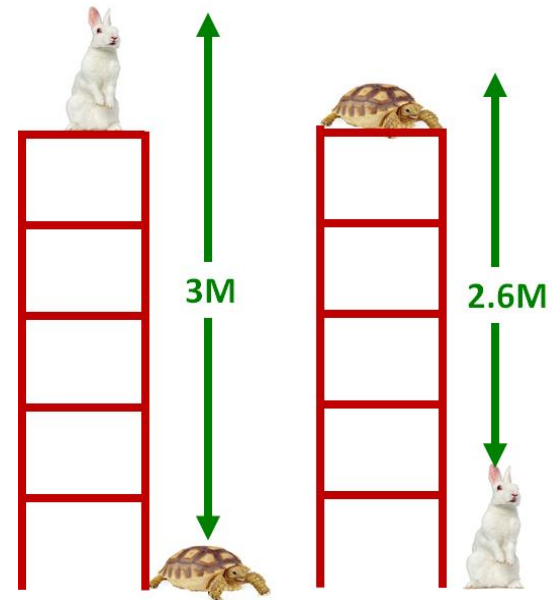
The Hare and Tortoise

The distance from the top of the hare's ears to the top of the tortoise shell is 3 metres.

If the tortoise and hare change over the distance becomes 2.6 metres.

How high is the hare if the ladder is 2.8 metres

3M

2.6M

The Hare and Tortoise

Equation 1

Hare Plus Ladder – Tortoise = 3M

Hare + 2.8M – Tortoise = 3M

Equation 2

Tortoise Plus Ladder – Hare = 2.6N

Subtract the equations

Tortoise + Tortoise = 0.4M

∴Tortoise = 0.2M

Using Equation 1

Hare = 0.4M tall

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The World

The World is about 40,000KM circumference at the equator.

If I put a steel band that is 40,000KM long around the equator it would touch the earth.

If I extend the steel band by just 40M:

Can I push a sheet of paper under the band?

Can a cat crawl under the band?

Can a chid walk under it?

Can a tall man walk under it?

Can an elephant walk under it?

The World

Circumference = 2π x radius where π (Pi) is about 3.1415926536
The radius of the Earth would be 40,000KM ÷ π = 6366197.724M

But the circumference of the enlarged band is 40,000.040KM
Dividing by 2π the radius is 40,000,040 ÷ π = 6366204.090M

The gap is 6366204.090M - 6366197.724M = 6.366M

So there is a gap of just over 6 metres so an elephant can walk under the band!

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Please go to the next lesson.

Sum Geometry