Math and Cats: PUZZLE SOLUTIONS

Last issue I presented two puzzles.

puzzle #1

A family owns some cats.

In their household there are a total of 20 legs and 14 ears. How many people are in the family and how many cats do they own?

puzzle #1 addendum

Assuming no person or animal is missing a leg or an ear, can you answer the puzzle?

ANSWER TO PUZZLE 1:

Technically, this is only a YES/NO question: "Can you answer the puzzle?" I bet the answer is YES!

We know that each human and each cat has two ears. So, if there are 14 ears in total, there must be 7 humans and cats together. Now we need figure out how many humans and how many cats make a total of 20 legs.

Does 2 humans and 5 cats work? Does 3 humans and 4 cats?

We can keep guessing and find that 4 humans and 3 cats works!

Or, here's something sneaky.

Each human has two legs and each cat has two front legs. With 7 humans and cats that makes for 14 legs. But we need an extra 6 legs to get up to 20 legs. Each cat also two back legs which we haven't counted for yet. The 6 extra legs must be the back legs from … 3 cats.

There are 3 cats and 4 humans.

puzzle #2

Two cats, Whiskers and Splot, are playing a game of chasey.

Whiskers is chasing Splot.

At any instant, Whiskers is running directly towards Splot, but Splot always manages to keep the same distance away from Whiskers.

The picture below shows just a section of the paths they followed. (The picture is cut off to the left and to the right.)
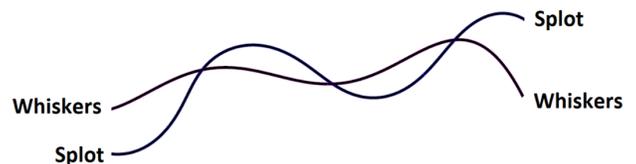
And now the question:

Were Whiskers and Splot running left to right in this picture, or right to left? How do you know?

ANSWER TO PUZZLE 2:

The key is the sentence:

At any instant, Whiskers is running directly towards Splot, but Splot always manages to keep the same distance away from Whiskers.

So, at every point along Whisker's path, Whiskers is pointing directly towards Splot (draw the tangent line to the path) and is the same distance from Splot.

We can see this is true if both cats are running left to right
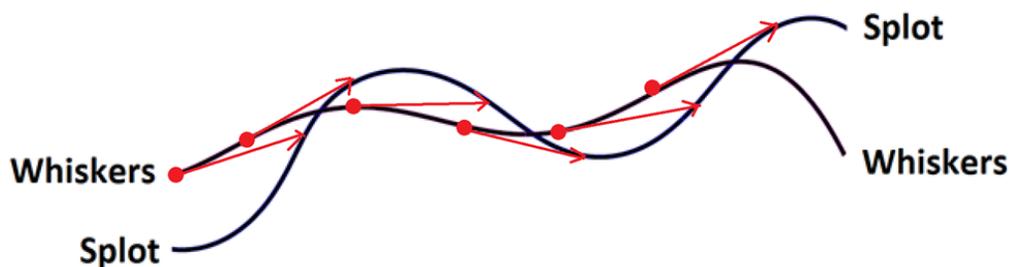
but not if we assume they are running right to left.
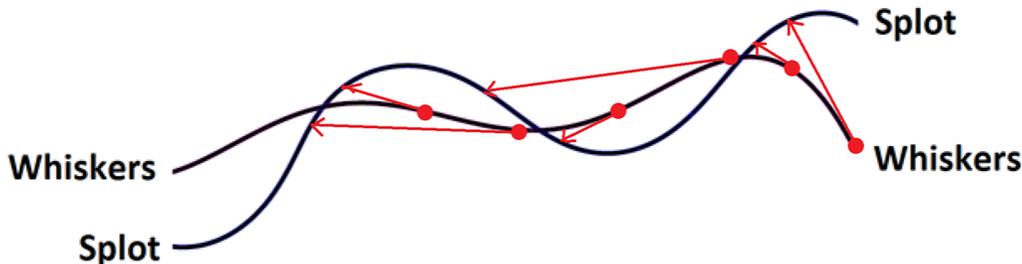
So the answer is: The cats ran from left to right!

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