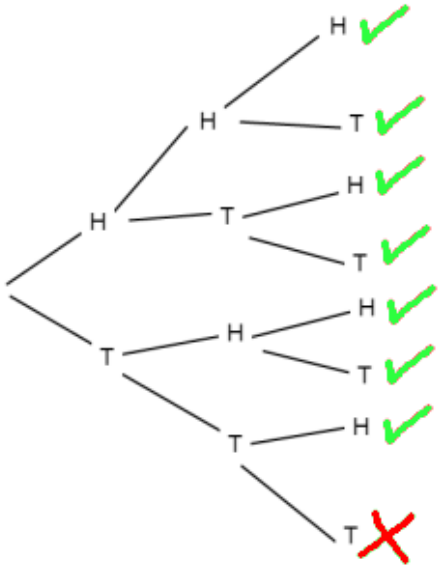
At least one...

Imagine flipping a coin three times.
What is the probability you will get a head on **at least one** of the flips.

Charlie drew a tree diagram to help him to work it out:



He put a tick by all the outcomes that included at least one head.

How could Charlie use his tree diagram to work out the probability of getting **at least one** head?

How could he use it to work out the probability of getting no heads?

What do you notice about these two probabilities?

Devise a quick way of working out the probability of getting at least one head when you flip a coin **4, 5, 6, ...** times.

What is the probability of getting **at least one** head when you flip a coin ten times?

Once you've worked out a neat strategy for the coins problem, take a look at these related questions which can be solved in a similar way:

Imagine choosing a ball from this bag and then replacing it.

If you did this three times what's the probability that you would pick **at least one** green ball?

What if you didn't replace the ball each time?

Imagine a class with 15 girls and 13 boys.
Three children are chosen at random to represent the class at School Council.
What is the probability that there will be **at least one** boy?