## The Elves' Fashion Parade

Mrs Christmas has had enough of scruffy elves in the North Pole Workshops. She ordered new hats, uniforms and boots for the elves. Toymakers have yellow outfits, present wrappers have green outfits and reindeer handlers have blue outfits (red is strictly reserved for the big boss). Unfortunately, the elves got to the outfits before Mrs Christmas could explain the new system: they helped themselves to whatever they liked.

Q1: How many possible combinations of outfits are there? The elves below may help you work it out or you can use your own method

Q2: What is the probability of selecting an elf in a fully matching uniform?


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The probability of picking each hat/uniform/boots is not equal. There are five reindeer handlers, fifteen present wrappers and thirty toymakers. The supplier only had black leather boots. The reindeer handlers had heard about the new rules and grabbed all the blue items first.

1) Colour in and label the tree diagram below.
2) Workout all the probabilities and outcomes.
3) What is the actual probability of selecting an elf in a fully matching outfit?

