

# What Percentage...?

**What percentage** of the height of a 4-m tree is a 1-m sapling?

A choir has 22 women and 18 men. **Find what percentage** of the choir's members are men.

One pair of jeans costs \$25 and another costs \$28. **How many percent** is the price of the cheaper jeans of the price of the more expensive jeans?

Look carefully at the questions above. Notice that the problems don't tell you the percentage; in other words, there is no number in the problem written as  $x\%$ . Instead, they ask *you* to find it!

## Questions with "What percentage..." or "How many percent..."

Asking "What percentage?" or "How many percent?" is the same as asking "How many hundredth parts?"

We can solve these questions in a two-part process:

1. First find out the part that is being asked for as a fraction. The denominator will probably not be 100.
2. Convert that fraction to a decimal. Then you can easily convert the decimal to a percentage!

**Example 1.** A choir has 22 women and 18 men. Find what percentage of the choir's members are men.

1. Find *what part* (fraction) of the choir's members are men. That is  $18/40$ , or  $9/20$ .
2. Write  $9/20$  as a percentage. You can use equivalent fractions:  $9/20 = 45/100 = 45\%$ .

**Example 2.** One pair of jeans costs \$25 and another costs \$28.

How many percent is the price of the cheaper jeans of the price of the more expensive jeans?

1. Write *what part* (fraction) the cheaper price is of the more expensive price. The answer is  $25/28$ .
2. Write  $25/28$  as a percentage. A calculator gives  $25/28 = 0.8928...$   
Rounded to the nearest whole percent, that is 89%.

1. **a.** What percentage of the height of a 4-m tree is the height of a little 1-m sapling?

**b.** How many percent is \$12 of \$16?

2. Find how many percent the shorter object's height is of the taller object's height.



6 m



8 m

**a.**



300 cm



120 cm

**b.**



4 m



5 m

**c.**