

Example

A carpenter is working with wooden planks that are 15m long and 12m long. These are difficult to transport so she wants to cut them into lengths that are all the same and as big as possible. What length does she choose to cut them up into?

This is a HCF question.

Factors of 15 are 1, **3**, 5, 15

Factors of 12 are 1, 2, **3**, 4, 6, 12

She cuts them up into 3m lengths.

Exercise

1. A dentist advises Mary to have a check-up with him every 6 months and visit the hygienist every 9 months. If Mary has both appointments today, how long will it be before she next visits both the hygienist and the dentist on the same day?
2. James checks the pressure in his car tyres every 4 weeks. Tom checks the pressure in his tyres every 3 weeks. If they both check the tyre pressure today, after how many weeks will they both check their tyres on the same day?
3. The train to Carmarthen leaves Cardiff every 40 minutes and the train to Newport leaves Cardiff every 12 minutes. If both trains leave at 08:00, what will the time be when they next leave Cardiff at the same time?
4. Sophie is an artist and works with red and yellow card. The red card is 16 cm wide and the yellow card is 28 cm wide. She wants to cut both cards up into equal widths with no waste. What is the largest possible width?
5. The 28A bus leaves the station every 24 minutes and the 9A bus leaves every 9 minutes. If they both leave at 14:00, what will the time be when they next leave the bus station at the same time?
6. Katie is making wooden shelves to sell. She uses reclaimed planks to make her shelves. They come in three different lengths: 1.8 m, 3 m and 1.2 m. She wants all of her shelves to be the same size. What is the largest length of shelf that she could make?
7. Noah and Melanie start a marathon at 10:00. They both pick up a drink after 25 minutes. After this initial drink, Noah picks up a new drink every 12 minutes whereas Melanie picks up a new drink every 15 minutes. When do they next both pick up a drink at the same time?