

Ratio, Proportion and Rates of Change

Age 11+ Level ★ Worksheet 1

1. Minutes in Between

How many minutes are there between 11:41 and 14:02?

2. Roman Distances

In ancient Rome they used the following units of length: 5 pedes = 1 passus, 125 passus = 1 stadium.

The atrium (courtyard) of Marcus' home was a square with each side 50 pedes long.

How many times did Marcus have to walk round his atrium to complete his daily exercise of 8 stadia? Can you write your answer in Roman numerals?

3. Flying Down Under

Fred flew to Melbourne, Australia. The flying time to Melbourne, which is 11 hours ahead of Britain, was 21 hours. Fred's flight left London at 11.30am on Tuesday. What time was it in Melbourne when Fred's flight arrived?

4. Thunder and Lightning

Sound travels at about 330 metres per second; light travels so fast that it arrives almost instantaneously. If you time the gap between a flash of lightning and its clap of thunder as 6 seconds, roughly how far away is the storm?

5. Family Fortune

Three brothers and a sister shared a sum of money equally among themselves. If the brothers alone had shared the money, then they would have increased the amount they each received by £20. What was the original sum of money?

6. Flapjack

A recipe for eight flapjacks needs 2oz butter, 3oz sugar and 4oz rolled oats.

How many flapjacks can I make if I have 14oz butter, 15oz sugar and 16oz rolled oats?

These problems are adapted from UKMT (ukmt.org.uk) and SEAMC (seamc.asia) problems.