

Painting a Wall

- 1 Working on her own, Qayla can paint a wall in 2 hours. Moses is a bit slower than Qayla and takes 3 hours to paint the same wall. Leillah is even slower than Moses and takes 6 hours to paint the same wall. How long will it take if they all paint the wall together at the same time?

What assumptions do you make when working out your answer?

- 2 Qayla is tired now, and so is working at exactly half her usual speed. Leillah and Moses are still working as quickly as before. How long will it take the three of them to paint the wall now?
- 3 After lunch, Qayla is full of energy and paints at twice her usual speed. (So she can paint the wall by herself in 1 hour now.) How long will it take all three of them to paint the wall now?
- 4 Three teams of three people are now competing to paint the wall. Each team member's individual wall-painting time is shown in the table.

Team A		Team B		Team C	
Iman	1 hour	Aga	1 hour	Jasper	2 hours
Faridah	2 hours	Zaina	2 hours	Malika	2 hours
Ayub	6 hours	Sharifah	10 hours	Louise	3 hours

Which team do you think will be the fastest at painting the wall? Why?

- 5 Three people, each painting at a different speed, altogether take $1\frac{1}{2}$ hours to paint the wall. What could their individual wall-painting times be?
- 6 Charlotte and Carmen can paint a wall together in 45 minutes. Charlotte and Cara can paint the same wall in 54 minutes. Carmen and Cara can paint the wall in 2 hours and 15 minutes. Which person is the fastest of the three and which is the slowest? How long will it take if all three of them paint the wall together? Why?