Equations in context: quantities, rates and conditions — Further practice

Year 7, upper volume • text pp. 67–78 • foundation lessons 34–39

Further practice 11

Two collections total 26 items. One has 6 more than the other. Let x be the smaller count. Find both.

Further practice 12

A rectangle is 3 cm longer than it is wide and has perimeter 30 cm. Let x be its width. Find the dimensions.

Further practice 13

A slower runner is 60 m ahead. Speeds remain 3 m/s and 5 m/s in the same direction. Let x be the faster runner’s catching time in seconds. Find x.

Further practice 14

Two workers take 3 hours and 6 hours alone for the same job. At constant additive rates, how long do they take together? Let the time be x hours.

Extension 15

Eight tickets cost 200 dollars. Adult tickets cost 30 dollars and student tickets 20 dollars. Let x be the adult-ticket count. Find both counts and check that they are possible.

Extension 16

Use the same tariff: first 20 units at 2 dollars, extra units at 3 dollars. The bill is only 30 dollars. Find usage x and explain why the extra-unit formula would use the wrong branch.