Problem of the Week
Problem B and Solution
Aisha's Books

Problem

Aisha is spending a week at her family's cottage and wants to read her favourite book, which is 400 pages long.

a) If she reads one page every 36 seconds, how many hours will it take her to read her book?

b) Suppose Aisha only reads from 10:15 a.m. to 2:10 p.m., and from 7:20 p.m. to 9:00 p.m. each day, starting on Monday. On what day and at what time will she finish reading her book?

c) Aisha decides to read a second book that is 350 pages in length, starting right after finishing her first book. If she continues to read at the same speed, then when will she finish her second book?

Solution

a) At a rate of one page every 36 seconds, 400 pages will take Aisha $400 \times 36 = 14\,400$ seconds, or $14\,400 \div 60 = 240$ minutes or $240 \div 60 = 4$ hours to read.
Note: Another way to solve this problem is to notice that since there are 60 seconds in a minute and 60 minutes in hour, there are $60 \times 60 = 3600$ seconds in an hour. We could then find the number of hours by calculating $14\,400$ seconds $\div$ 3600 seconds per hour, which equals 4 hours.

b) The number of hours between 10:15 a.m. and 2:10 p.m. is 3 hours (from 10:15 to 1:15), plus 55 minutes (from 1:15 to 2:10). Thus Aisha will need another 5 minutes to finish the book. Therefore, she will finish at 7:25 p.m. on Monday. This is five minutes after she starts again at 7:20 p.m.

c) The second book will take Aisha $350 \times 36 = 12\,600$ seconds, which is equal to $12\,600 \div 60 = 210$ minutes, or 3 hours and 30 minutes.
Since she will start reading at 7:25 p.m. on Monday, Aisha will have 1 hour and 35 minutes, or 95 minutes, to read between 7:25 and 9:00 p.m. on Monday.
Aisha will need another $210 - 95 = 115$ minutes, or 1 hour and 55 minutes, to finish her second book.
Starting at 10:15 a.m. on Tuesday and reading for 1 hour and 55 minutes will take her until 12:10 p.m. So she will be done her second book at 12:10 p.m. on Tuesday.