

Question from Wing Kit (20.09.13)

Charles and Derwin ran in a race around a 400 m track. Charles ran at a speed of 190 m/min and Derwin at a speed that was 25 m/min slower than Charles throughout the race. How many complete rounds would Charles have finished when he had run a distance of 300 m more than Derwin?

Solution:

Assuming both Charles and Derwin start at the same time:

Difference in speed: 25 m/min

1 min \rightarrow Charles ran 25 m further than Derwin

For Charles to run 300 m more than Derwin,

$$\text{Time taken} \rightarrow 300 \div 25 = 12 \text{ min}$$

$$\text{Distance ran by Charles} \rightarrow 12 \text{ min} \times 190 \text{ m/min} = 2280 \text{ m}$$

$$1 \text{ complete round} \rightarrow 400 \text{ m}$$

$$\text{Number of complete rounds} \rightarrow 2280 \text{ m} \div 400 \text{ m} = 5.7 \approx 5$$

Ans: Charles had completed 5 complete rounds.