Timetables and Timings

Remember

The most common mistake that is made around timetables and timings is forgetting that there are 60 minutes in an hour! Therefore remember that, for example,

0.5 hrs = 60 x 0.5 = 30 min *1.2 hrs = 60 x 1.2 = 72 min*

Example

Here is a section of the train timetable from Oxbury to London

Dep	0530	0630	0715	0742	0815
Arr	0615	0720	0805	0900	0935

(i) If all trains follow the same route, which train travels the fastest?

Since all trains are travelling the same route, they are all covering the same distance. Therefore, the train that travels the fastest is the train that takes the shortest length of time to get from Oxbury to London.

By quick examination, we see that this is the 5.30am train, which takes 45 minutes.

(ii) Oxbury Rail Service which runs the trains, refunds train tickets for journeys that are delayed by more than 30% of their expected journey time. What time would the 0715 train need to arrive in London after, for journey tickets to be eligible for refund?

The 7.15am train is due to arrive in London at 8.05am, and so has an expected journey time of 50 minutes. A 30% longer journey time would take

50 x 130% = 65 minutes

Therefore journeys that take more than 65 minutes would be eligible for refund.

That is, if the 0715 train arrives after 0820, the train tickets would be eligible for refund.

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Example

Here is the morning timetable for the 7A bus between Oldville and Big City.

(The lines or dashes mean that the bus does not stop there.)

Oldville	0630	0700	0715	0741
Newville	0637	0715	-	0800
Summertown	0653	0733	-	0817
Wintertown	0714	0758	0802	-
Big City	0731	0817	0825	0854

(i) What is the percentage difference between the journey from Oldville to Big City that takes the longest length of time, and the shortest?

We need to calculate the length of time that each of the four journeys take

0630 bus Starts at 0630 and arrives at 0731 Journey length 61 min
0700 bus 77 min
0715 bus 70 min
0741 bus 73 min

Therefore the shortest journey is 61 min and the longest is 77 min. We work out the difference between them 77 – 61 = 16 min and then calculate this as a percentage of the shortest journey time

16 / 61 x 100 = 26.2%

Therefore the longest journey time is 26.2% longer than the shortest journey time.

(ii) If Oldville to Big City is a distance of 54 miles, what is the average speed of the 0715 bus, in miles per hour?

From the previous question, we know that the 0715 bus takes 70 minutes to get from Oldville to Big City. First we need to express 70 minutes in hours
70 / 60 = 1.16 hours

We recall that Speed = Distance / Time = 54 / 1.167 = 46 mph

Therefore the 0715 bus has an average speed of 46mph.

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