

Additional guidance

Units

You may want to use the number format type hh:mm:ss. (In the “Format Cells” window, this is in the “custom” category.) This will ensure that the results recorded are easy to interpret, rather than using decimal numbers of hours or minutes.

Speed = distance / time

If the time is currently shown in the format hh:mm:ss then it can be converted to a proportion of an hour by dividing by 1 hour (i.e. divide by 01:00:00). You can enter 01:00:00 into a cell and divide by the contents of that cell. Hence the speed is given by:

$$\text{distance of stage} \div [(\text{time taken for competitor to complete the stage})/1 \text{ hour}]$$

Transition times

You will need to make an assumption about the transition times in the Minister’s triathlon.

For example, you may decide to make the transition times vary depending on the length of the preceding stage of the triathlon or you may decide that they should be unchanged.

Useful Excel functions

The **RANK()** function in Excel can be used to return the ranking of a cell within an unsorted array of numbers. For example, RANK [cell, array, 0] will return the ranking that the number in the given cell would have if the (unsorted) array was sorted into descending order. And RANK[cell, array, 1] will take a similar approach but assuming it was sorted into ascending order.

The **QUARTILE()** function in Excel returns the result at each quartile point, within an unsorted array of numbers. For example, QUARTILE[array, 0] will return the minimum value and QUARTILE[array, 1] will return the value of the first quartile.

Goal Seek

If you are using Goal Seek to solve to an exact target figure and it is failing to find a solution, try changing the variable cell manually instead.