Task E

Controlling races with graphs and checking with tables of values

You need to sketch the graphs that control the motion of Blue Waters and Green Grass in different situations. There may be more than one correct graph for each situation. You should check each graph using the software. The step button will help.

1) Sketch a graph of a race in which:
- The two cars start at the same position.
- The two cars travel for the same amount of time, but Green Grass is faster than Blue Waters.

Don't forget to label your lines on the graph with the names of the cars.

b) Now edit the graph in Activity 3.3 and play the simulation to check if your graph was correct. If not, sketch a new graph and check again.

C What was the speed of each car? (Use the graph)

D Check that you are correct by using the Table of Values. How do you know?

2) Sketch a graph of a race in which:
- The two team cars start at the same position.
- The two team cars travel the same distance.
- Blue Waters finishes 5 hours before Green Grass.

Don't forget to label your lines in the graph with the names of the cars.

b) Now edit the graph in Activity 3.3 and play the simulation to check if your graph was correct. If not, sketch a new graph and check again.

C What distance did each car travel?

D Use the table to work out the speed of each car.

3) Sketch a graph of a race in which:
- The two cars start at the same position.
- Green Grass travels at 50 miles an hour.
- Blue Waters travels at 80 miles an hour.
- Both cars travel 400 miles.

Don't forget to label your lines on the graph with the names of each car.

b) Now edit the graph in Activity 3.3 and play the simulation to check if your graph was correct.

C Blue Waters completed the race before Green Grass. How long before?