



# Graphique

# de Temps de Distance

Name: **Answers**

## Topic

1. Translate the French title back to English to discover the topic of this task:

Distance Time Graph

## Introduction

Graphs are used to display data and interpreting them is an important skill in many occupations. A huge amount of data is taken in the Tour de France and teams employ scientists to interpret this data and present it to the rest of the team.

1. **Other than distance ridden, what other data would be obtained from cyclists participating in the Tour de France?**

Range of answers: heart rate, speed, water/energy consume.

2. **Suggest why the data is displayed on a graph rather than numbers in a table?**

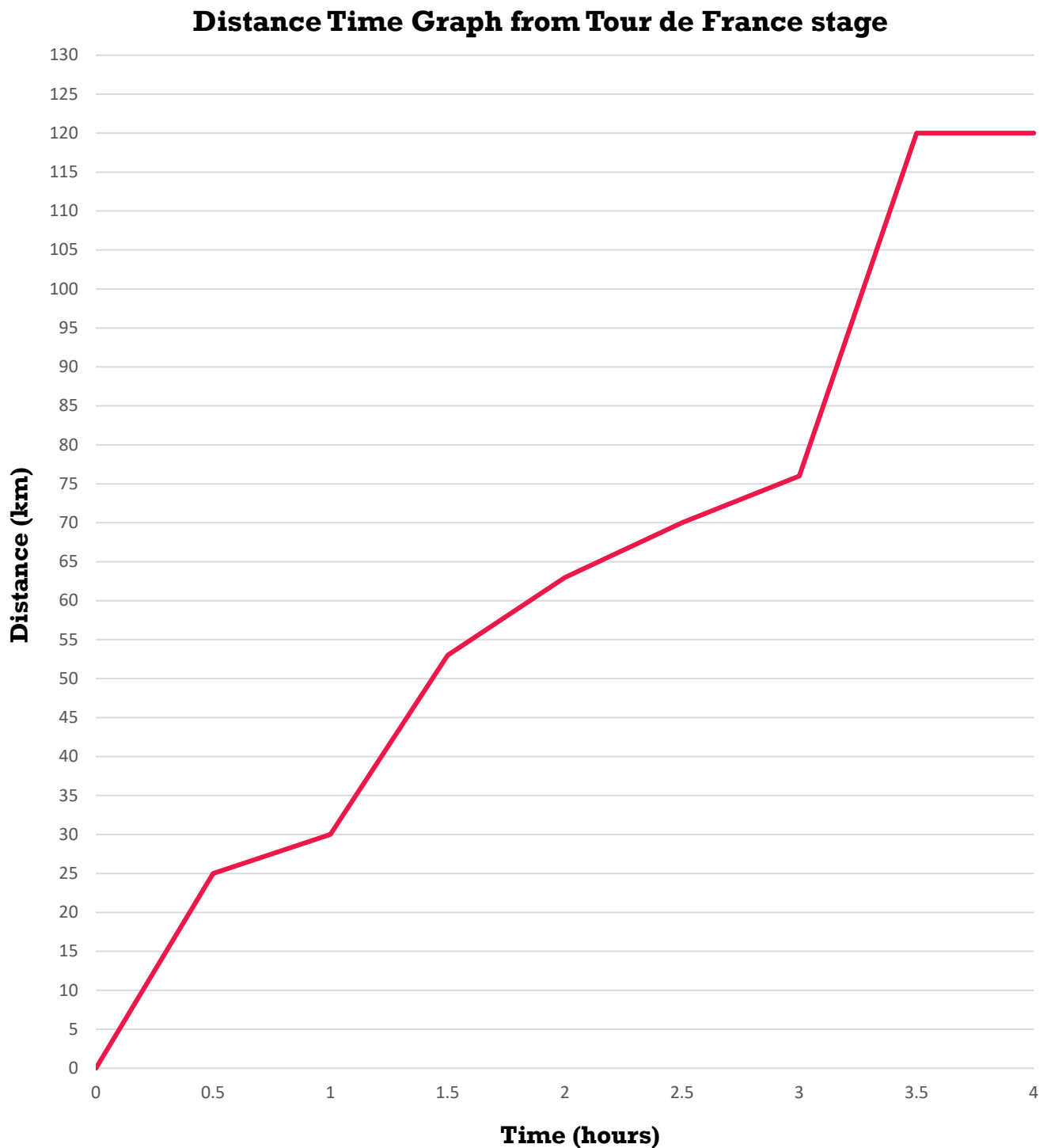
Trends are easier to see when data is displayed on a graph.

3. **Name 3 examples of when you have seen data displayed on a graph over the past week.**

Example	Data displayed
One	Range of answers including stock market, temperature.
Two	
Three	

# Distance time graph

The following graph shows data from a rider in a stage of the Tour de France:



4. Complete the missing values in the table below:

Time (hr)	0	0.5	1	1.5	2	2.5	3	3.5	4
Distance (km)	0	25	30	53	63	70	76	120	120

## Interpretation

5. What technology do you think was used to collect this data?

GPS

6. How long was this stage of the Tour de France?

120 km

7. How many hours did it take for the rider to finish the stage?

3.5 hours (last 30 minutes the bike was stopped)

8. The gradient on a distance time is an indication of the speed an object is going. Match the gradient to the speed in the following table:

Gradient	Speed
Gradual	Slow
Steep	Fast
Horizontal	Stopped

9. Indicate when the rider was:

- a. Traveling at their fastest:      between 3-3.5 hrs
- b. Traveling at their slowest:      between 0.5-1 hrs
- c. Was stopped:      3.5-4 hours

The average speed can be calculated using the following formula:

$$\text{Average speed } \left( \frac{\text{km}}{\text{h}} \right) = \frac{\text{Change in distance traveled (km)}}{\text{Change in time (hr)}}$$

10. Calculate the average speed of the rider between the following points (perform your working out on a separate page and take a photo of it when submitting your work):
- a. 0 hr and 1 hr: 30 km/h
  - b. 1.5 hr and 3 hr: 15.3 km/h
  - c. 3 hr and 3.5 hr: 88 km/h
  - d. 3.5 hr and 4 hr: 0 km/h

11. The Tour de France is known for its mountains. Using the distance time graph, when do you believe the rider was riding uphill and downhill? Justify your answer.

Slope	Time	Justify your answer
Uphill	1.5-3 hrs	Travelling at a slow speed
Downhill	3-3.5 hrs	Travelling at a fast speed

12. The data at the end of the graph (between 3.5 – 4 hrs) appears to be an error. Describe what you think has occurred at this point.

The gps was left on after the rider had completed the race.

13. State another occupation where the role includes graph interpretation.

Various answers.