

Using line graphs

Construct and use line graphs to solve problems



- 1 Copy the table below. Then use the relationship 8 km \approx 5 miles to complete it.

Kilometres	0	8	16	24	32	80
Miles	0	5				

You will need:

- 1 cm squared paper
- ruler

- 2 Use the data from the completed table in Question 1 to draw a line graph for converting between miles and kilometres. Make sure you join the points with a straight line and that your graph is big enough to extend your line to the point (80, 50).

- 3 Use your graph to convert these distances to kilometres.

a 25 miles b 30 miles c 45 miles

- 4 Use your graph to convert these distances to miles.

a 20 km b 28 km c 44 km

- 1 Copy the table below. Then use the relationship 6 minutes to travel a distance of 5 kilometres to complete it.

Time (min)	0	6	12	18	24	72
Distance (km)	0	5				

You will need:

- 1 cm squared paper
- ruler

- 2 Use the data from the completed table in Question 1 to draw a time distance graph. Make sure you join the points with a straight line and that your graph is big enough to extend your line to the point (72, 60).

- 3 Find the distance travelled in: a 36 minutes b 60 minutes

- 4 Find the time taken to travel: a 35 km b 45 km

- 5 The graph on the right shows that a taxi driver charges £2 for a pick-up fee and £1.50 per mile.

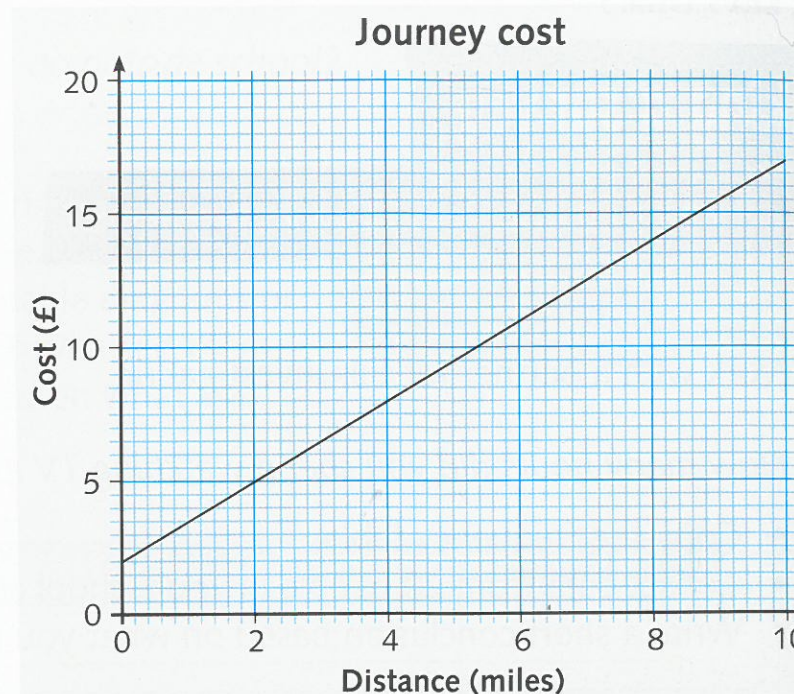
- a What is the cost for a journey of:

i 2 miles? ii 6 miles?

iii 10 miles? iv 5 miles?

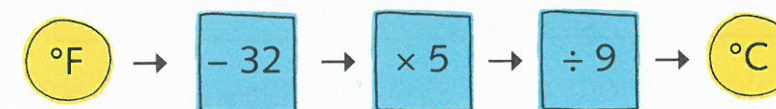
- b What distance was travelled if the fare was:

i £12.50? ii £15.50?



Challenge 3

A function machine converts °F to °C using the rule:



You will need:

- Resource 49: °F to °C graph paper
- 1 cm squared paper
- ruler

- 1 Copy the table below. Use the function machine to complete the values for °C rounded to the nearest degree.

°F	32	41	61	82	95	110
°C						

- 2 Plot the points on Resource 49: °F to °C graph paper and draw the conversion graph.

- 3 Copy the table on the right and use your graph to convert the temperatures to °C, to the nearest degree.

City	°F	°C
Boston	77	
Canberra	52	
Madrid	81	
Tokyo	72	
Dubai	102	
Luxor	106	
Paris	66	
Bangkok	91	

