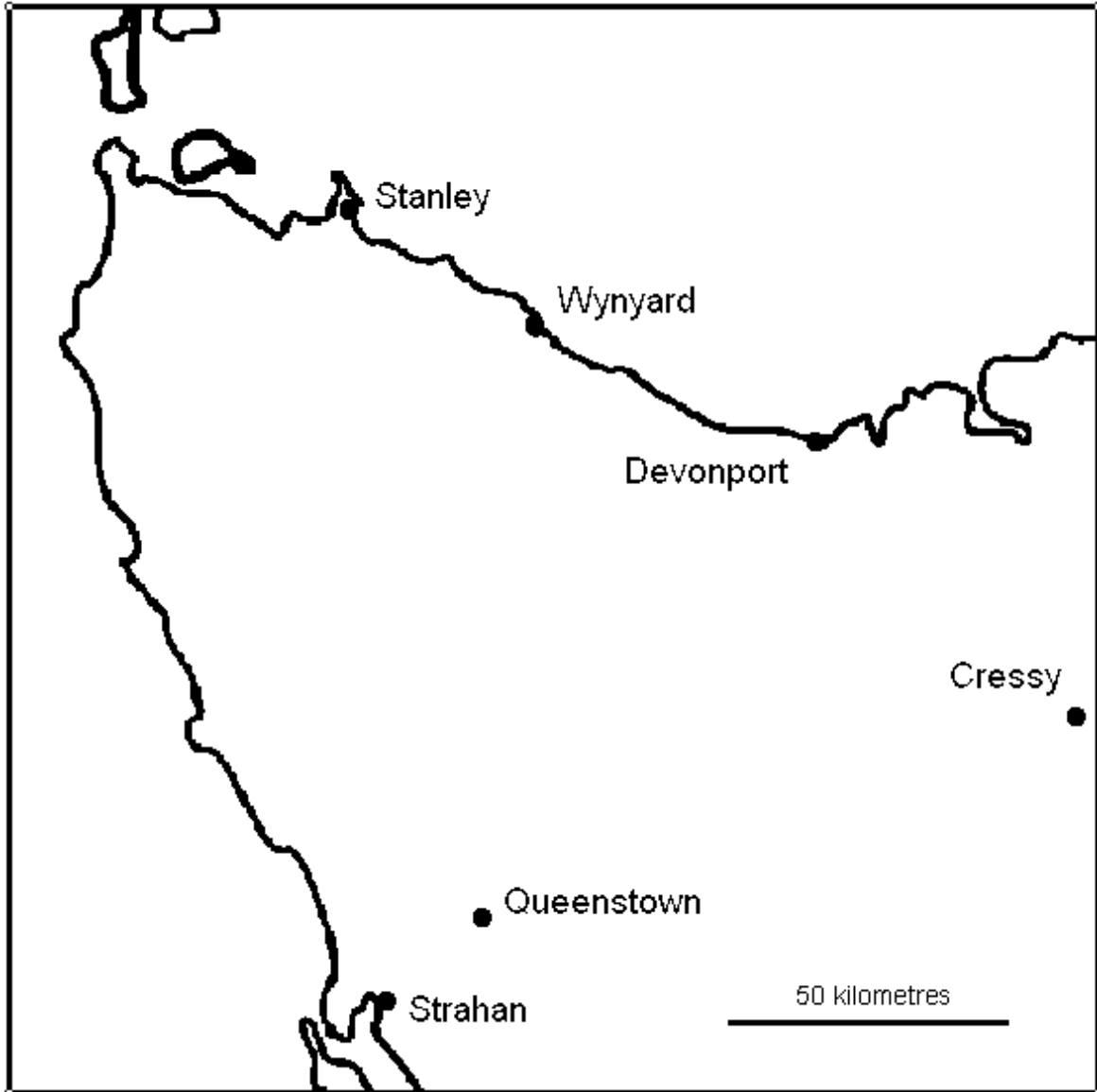


Working with scales worksheet

Here is a map of north-western Tasmania. On the map is a 4 cm line that represents an actual distance of 50 km.



- 1 Without making any measurements or calculations, estimate the direct distance between:
 - Strahan and Queenstown
 - Stanley and Wynyard
 - Devonport and Queenstown

- Wynyard and Cressy
- Strahan and Cressy

On the map, 4 cm represents 50 km.

We can write this as a ratio of 4 cm : 50 km.

However, ratios and scales should use the same units for each value. Using centimetres we have:

4 : _____

Which is equivalent to 1 : _____

- 2 Now measure the straight-line map distances between the towns in question 1. Calculate the distances using the scale and complete the table.

For example: Strahan to Queenstown

Map distance is 1.8 cm.

Map scale 1:1 250 000

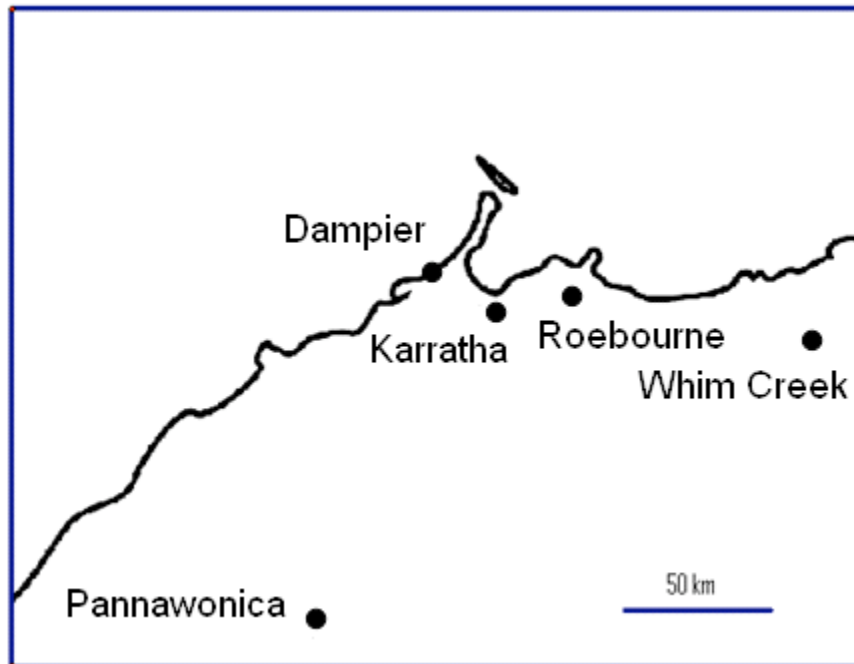
Actual distance $1.8 \times 1\,250\,000 = 2\,250\,000$ cm

= 22.5 km

	Map distance	Calculated distance
Strahan to Queenstown		
Stanley to Wynyard		
Devonport to Queenstown		
Wynyard to Cressy		
Strahan to Cressy		

3 Comment upon the accuracy of your estimations in question 1.

This is a map of north-west Western Australia. On this map is a 2 cm line that represents an actual distance of 50 km.



4 Without making any measurements or calculations, estimate the direct distance between:

- Dampier and Roebourne
- Pannawonica and Karratha
- Whim Creek and Karratha
- Dampier and Pannawonica
- Roebourne and Whim Creek

- 5 The scale on this map is 2 cm represents 50 km. Using centimetres for both measurements we have a scale of:

2 : _____

Which is equivalent to 1 : _____

- 6 Measure the straight line distances between the towns in question 4. Calculate the distances using the scale and complete this table.

	Map distance (km)	Calculated distance (km)
Dampier to Roebourne		
Pannawonica to Karratha		
Whim Creek to Karratha		
Dampier to Pannawonica		
Roebourne to Whim Creek		

- 7 Reference to a road atlas of Australia gives the following distances between towns:

Tasmanian towns	Road distance (km)	WA towns	Road distance (km)
Strahan to Queenstown	41	Dampier to Roebourne	60
Stanley to Wynyard	61	Pannawonica to Karratha	200
Devonport to Queenstown	182	Whim Creek to Karratha	124
Wynyard to Cressy	174	Dampier to Pannawonica	219
Strahan to Cressy	260	Roebourne to Whim Creek	84

- 8 How close are your calculations and these distances?
- 9 Does one map appear to be more accurate than the other?
- 10 Discuss possible reasons for your answers to these questions.