

ORGANIZING AND ANALYZING DATA

Using Graphs to Make Predictions

Graphs can be very useful to identify trends that occur in experimental data. Trends in data can also be used to make predictions about where additional data points might occur if more experimental trials are conducted. You can use the data presented in graphs to make two general types of predictions.

- An **interpolation** is a prediction made between known data points.
- An **extrapolation** is a prediction made beyond known data points.

1. Use the graph to fill in the blanks in the data table.

Figure 1. Age and Survival Rate

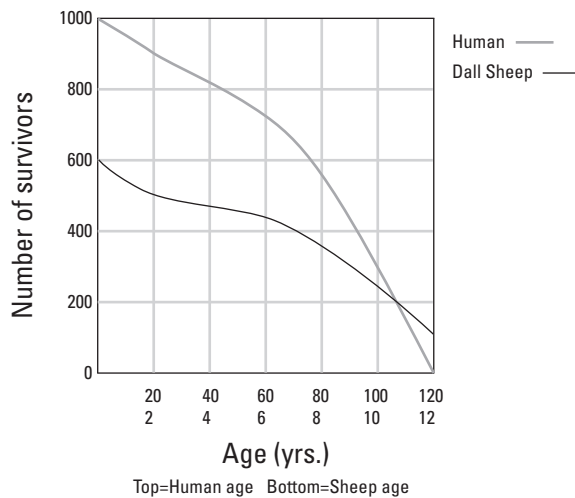


Table 1. Age and Survival Rate

Age (years)	Human Survivors per 1000	Age (years)	Dall Sheep Survivors per 1000
20	900	2	500
40		4	
60	730	6	440
80		8	
100		10	
120	0	12	100

2. Which type of predictions did you make to fill in the empty spaces in the table?

3. How is the curve showing human survival similar to the curve showing sheep survival? How are the curves different?

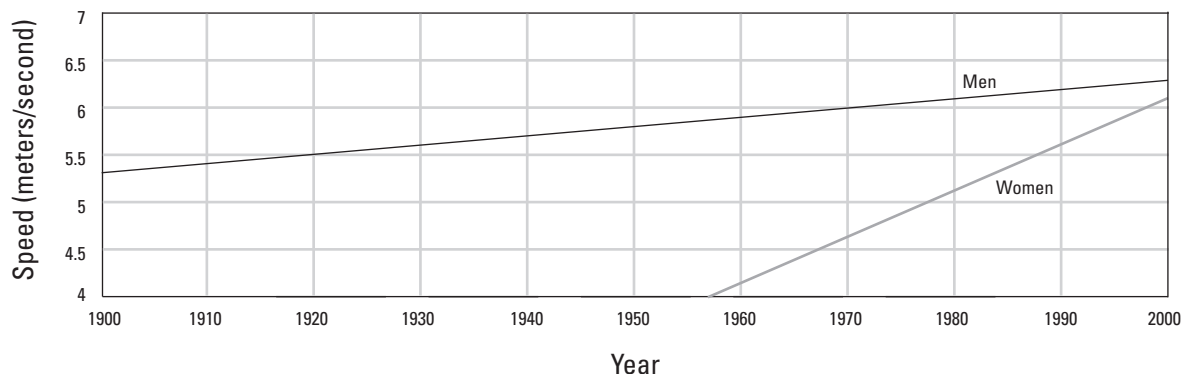
Name _____

Period _____

Date _____

Answer questions 4–7 about the information in the graph shown below.

Figure 1. World Record Speeds for 10,000 Meters



4. Using the information in the graph, during which year do you think the men's and women's world record speeds for 10,000 meters will be equal? Why?

5. Explain how you made your determination.

6. Which method did you use for making your determination?

7. How reliable do you think your determination is? Explain.

Challenge Do you think it is always possible to extrapolate or interpolate to arrive at a reliable estimate? Why or why not?
