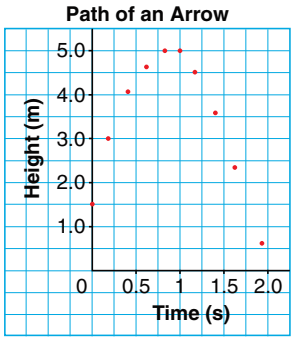
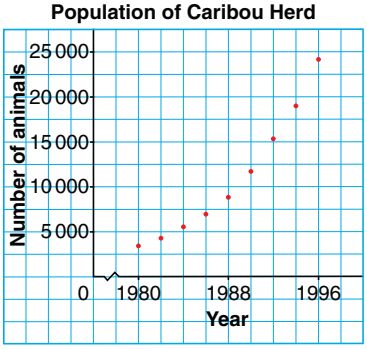
Practice

1. Your teacher will give you a copy of each graph.
Describe any trends in the data. Draw a curve of best fit for each set of data.

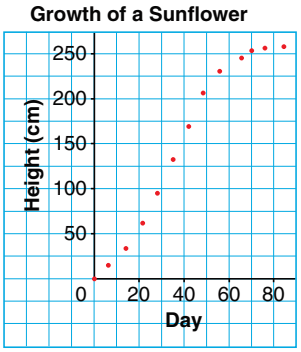
a)



b)



c)



2. The table shows the number of hours of daylight in Waterloo, Ontario, for the first day of each month in 2005.

Month	Jan	Feb	Mar	April	May	June	July	Aug	Sep	Oct	Nov	Dec
Daylight hours	9.0	9.9	11.2	12.8	14.2	15.2	15.4	14.5	13.2	11.7	10.3	9.2

a) What trend do you see in the data? Explain the trend.
b) Graph the data. Draw a curve of best fit.
c) Estimate the number of hours of daylight on March 15.
d) The day with the most daylight is June 21.
Estimate the number of hours of daylight on June 21.
e) Estimate the number of hours of daylight on your birthday.
How did you do this?

You have used a curve of best fit to predict values that lie between data points.
You can also extend a curve of best fit to predict values beyond the data points.

Example

A soccer ball is kicked up into the air from the ground.
The height of the ball is measured at regular time intervals.
Here are the data.

Time (s)	0	0.2	0.4	0.6	0.8	1.0	1.2	1.4	1.6
Height (m)	0	2.2	4.0	5.4	6.5	7.1	7.3	7.2	6.7

a) What trend do you see in the data? Explain the trend.
b) Graph the data. Draw a curve of best fit.
c) When do you think the ball is at its greatest height?
Use the graph to check.

3. An Internet host is a computer directly connected to the Internet.
The number of Internet hosts around the world has grown quickly.
The data in the table are for January of each given year.

Year	1992	1994	1996	1998	2000	2002	2004	2006
Internet hosts (millions)	0.7	2.2	9.5	29.7	72.4	147.3	233.1	395.0

a) What trend do you see in the data? Explain the trend.
b) Graph the data. Draw a curve of best fit.
c) Estimate the number of Internet hosts in 2001.
d) When might the number of Internet hosts reach 500 million? Justify your answer.

4. **Assessment Focus** The high divers at Paramount Canada's Wonderland perform competitive dives from a height of 21 m.
A diver's height is measured every 0.2 s.

Time (s)	0	0.2	0.4	0.6	0.8	1.0	1.2
Height (m)	21	20.7	20.2	19.4	17.6	16	14

a) What trend do you see in the data? Explain the trend.
b) Graph the data. Draw a curve of best fit.
c) Estimate when the diver will be 10 m above the water.
d) When does the diver reach the pool? How do you know?

5. **Take It Further** The table shows the number of people enrolled in apprenticeship programs in Canada, rounded to the nearest thousand.

Year	1995	1996	1997	1998	1999	2000	2001	2002
Females (thousands)	11	12	13	14	16	17	20	22
Males (thousands)	153	154	159	163	173	184	198	213

a) Graph both sets of data on one grid.
b) For each data set, draw a line or curve of best fit.
How did you decide which to draw?
c) Estimate the numbers of females and males enrolled in apprenticeship programs in 2003. How did you do this?

In Your Own Words

Suppose you graph data for which a curve of best fit can be drawn.
How do you decide where to draw the curve? Include a graph in your explanation.