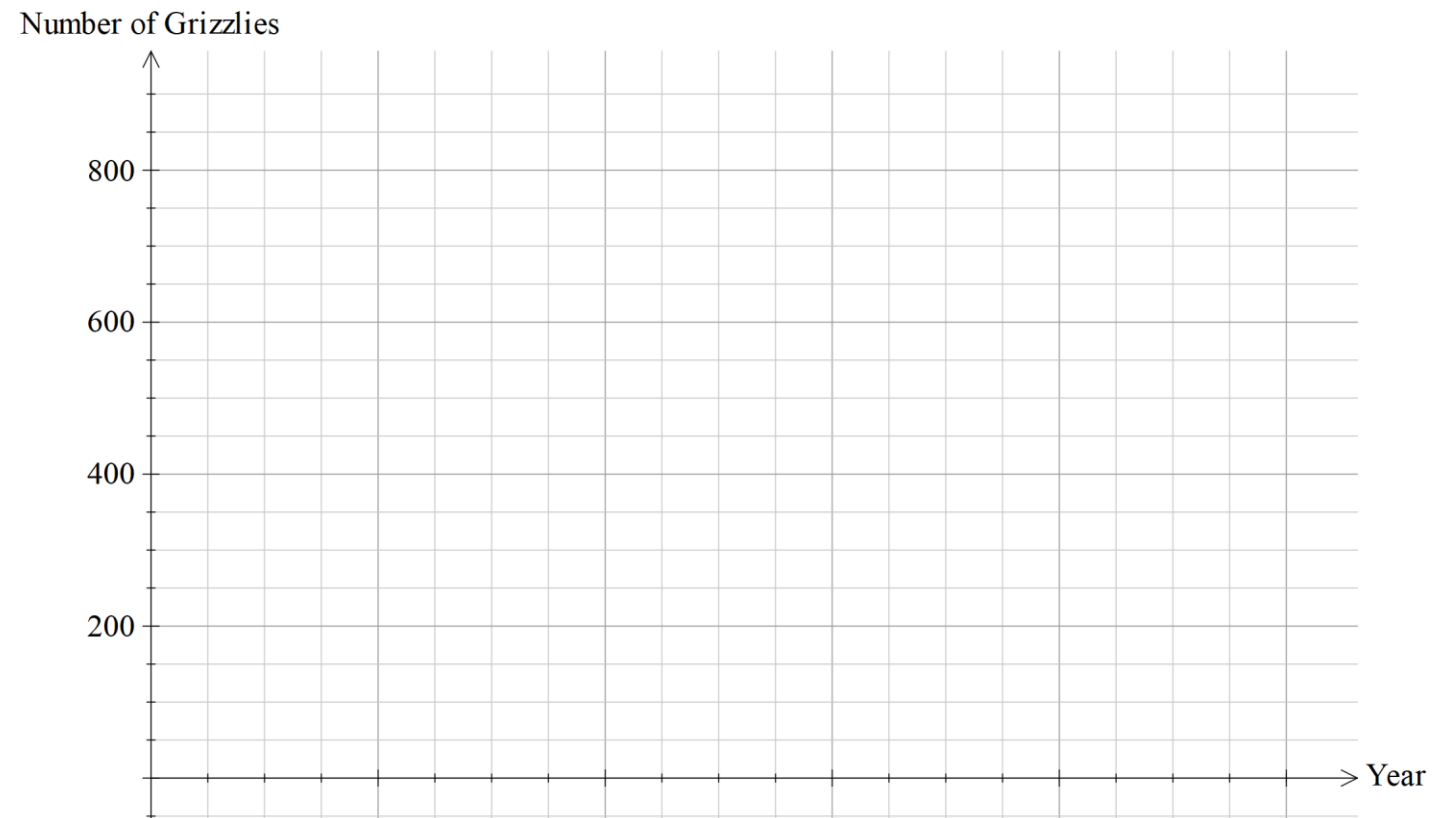


Statistics show that over 80 percent of all bear deaths are related to human activities. Fragmentation of their habitat due to the building and use of new roads or industrial or recreational facilities is detrimental to their population. Like other large mammals, grizzly bears do not adapt well to major changes in their environment.

Using the data in the table, draw a graph that shows the change in size of the Alberta grizzly bear population outside the National Parks over time.

Number of Grizzly Bears in Alberta, Outside the National Parks	
Year	Population Size
1988	575
1989	536
1990	547
1991	638
1992	669
1993	686
1994	700
1995	735
1996	765
1997	776
1998	807
1999	833
2000	841



- 1.) To manage the grizzly bear population better, the government of Alberta introduced a hunting lottery that awards a limited number of grizzly bear hunting licences each year to try and protect the population instead of allowing anyone to go hunt grizzly bears whenever they want. What year do you think that this regulation was introduced? How can you tell?

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Population counts were made in several bear management regions around the province. Some of the data are in the table below shown in the second table.

Grizzly Bear Population Sizes in Alberta		
Region	Area (km <sup>2</sup> )	Bear Population
A	14128	31
B	6089	44
C	22840	168

- 2.) Calculate the number of grizzly bears per 1000 km<sup>2</sup> for each region.

$$\text{Grizzly Bear Population per } 1000 \text{ km}^2 = \frac{\# \text{ of Bears}}{\text{Area}} \times 1000$$

A	B	C

- 3.) Compare the densities for the three regions. Why do you think that there is a difference in the populations?

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4.) Grizzly bears reach sexual maturity at five years of age. When food is abundant, females average two cubs per litter every other year. How might this present a challenge for people who are working to conserve the grizzly bear population?

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5.) There is a road sign on the highway that asks drivers to reduce their speed from 90 to 70 km/h along a 15 km stretch where grizzly bears are known to forage for food. Do you think that lowering the speed limit along this stretch of highway is a reasonable action? Why or why not?

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6.) Would the installation of underpasses along this stretch of highway be a better alternative? Compare the advantages and disadvantages of each option.

Advantages	Disadvantages