

**FITTING LINES TO DATA** Make a scatter plot of the data in the table. Draw a line of fit. Write an equation of the line.

6. 

<b>x</b>	1	1	3	4	5	6	9
<b>y</b>	10	12	33	46	59	70	102

7.

<b>x</b>	1.2	1.8	2.3	3.0	4.4	5.2
<b>y</b>	10	7	5	-1	-4	-8

12. **★ SHORT RESPONSE** Make a scatter plot of the data. *Describe* the correlation of the data. Is it possible to fit a line to the data? If so, write an equation of the line. If not, explain why.

<b>x</b>	-12	-7	-4	-3	-1	2	5	6	7	9	15
<b>y</b>	150	50	15	10	1	5	22	37	52	90	226

**MODELING DATA** Make a scatter plot of the data. *Describe* the correlation of the data. If possible, fit a line to the data and write an equation of the line.

13. 

<b>x</b>	10	12	15	20	30	45	60	99
<b>y</b>	-2	4	9	16	32	55	87	128

14. 

<b>x</b>	-5	-3	-3	0	1	2	5	6
<b>y</b>	-4	12	10	-6	8	0	3	-9

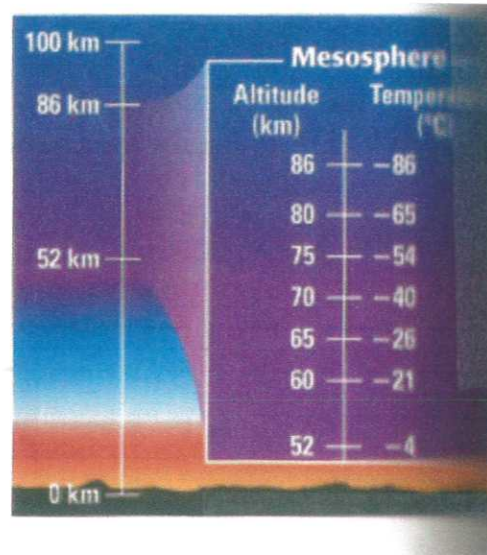
16. **★ SHORT RESPONSE** The table shows the approximate home range size of big cats (members of the *Panthera* genus) in their natural habitat and the percent of time that the cats spend pacing in captivity.

Big cat ( <i>Panthera</i> genus)	Lion	Jaguar	Leopard	Tiger
Home range size (km <sup>2</sup> )	148	90	34	48
Pacing (percent of time)	48	21	11	16

- Make a scatter plot of the data.
- Describe* the correlation of the data.
- The snow leopard's home range size is about 39 square kilometers. It paces about 7% of its time in captivity. Does the snow leopard fit the pacing trend of cats in the *Panthera* genus? *Explain* your reasoning.

17. **EARTH SCIENCE** The mesosphere is a layer of atmosphere that lies from about 50 kilometers above Earth's surface to about 90 kilometers above Earth's surface. The diagram shows the temperature at certain altitudes in the mesosphere.

- Make a scatter plot of the data.
- Write an equation that models the temperature (in degrees Celsius) as a function of the altitude (in kilometers) above 50 kilometers.
- At about what rate does the temperature change with increasing altitude in the mesosphere?



18. **ALLIGATORS** The table shows the weights of two alligators at various times during a feeding trial. Make two scatter plots, one for each alligator, where  $x$  is the number of weeks and  $y$  is the weight of the alligator. Draw lines of fit for both scatter plots. Compare the approximate growth rates.

Weeks	0	9	18	27	34	43	49
Alligator 1 weight (pounds)	6	8.6	10	11.6	15	17.2	19.8
Alligator 2 weight (pounds)	6	9.2	12.8	13.6	20.2	21.4	24.3