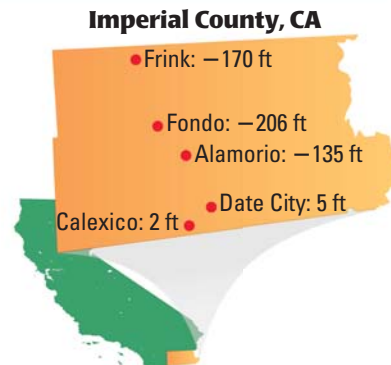


PROBLEM SOLVING

EXAMPLE 3
on p. 65
for Exs. 53, 57

53. **GEOGRAPHY** The map shows various locations in Imperial County, California, and their elevations above or below sea level. Order the locations from lowest elevation to highest elevation.

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54. **SPORTS** In golf, the goal is to have the least score among all the players. Which golf score, -8 or -12 , is the better score?

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EXAMPLE 5
on p. 66
for Exs. 55–56

55. **MUSIC** A guitar tuner is a device that tunes a guitar string to its exact pitch. Some tuners use the measure *cents* to indicate how far above or below the exact pitch, marked as 0 cents, the string tone is. Suppose that one string tone measures -3.4 cents, and a second string tone measures -3.8 cents. Which string tone is closer to the exact pitch? *Explain.*

56. **TAKS REASONING** The change in value of a share of a stock was $-\$0.45$ on Monday, $-\$1.32$ on Tuesday, $\$0.27$ on Wednesday, and $\$1.03$ on Thursday. On which day was the absolute value of the change the greatest?

(A) Monday (B) Tuesday (C) Wednesday (D) Thursday

57. **MULTI-STEP PROBLEM** An equalizer on a stereo system is used to increase or decrease the intensity of sounds at different frequencies. The intensity is measured in decibels (dB), and the frequencies are measured in hertz (Hz). The table shows the intensity at different frequencies on a stereo system.

Frequency (Hz)	32	64	125	250	500	1000	2000	4000	8000
Intensity (dB)	8.8	7.1	5.8	1.5	-2.8	-1.5	2.7	2.8	2.9

- a. Which frequency has the least sound intensity?
b. *Describe* the change in sound intensity as the frequency increases from 32 hertz to 8000 hertz.

58. **WEATHER** A wind chill index describes how much colder it feels outside when wind speed is considered with air temperature. The table shows the wind chill temperatures for given pairs of air temperature and wind speed.

Wind Chill Temperatures ($^{\circ}$ F)					
Wind speed (mi/h)	Air temperature ($^{\circ}$ F)				
	20	10	0	-10	-20
0	20	10	0	-10	-20
10	9	-4	-16	-28	-41
20	4	-9	-22	-35	-48
30	1	-12	-26	-39	-53

- a. **Compare** Which feels colder, an air temperature of 0° F with a wind speed of 30 miles per hour, or an air temperature of -10° F with a wind speed of 10 miles per hour?
b. **Analyze** How does the wind chill temperature change under constant wind speed and decreasing air temperature? under constant air temperature and increasing wind speed?