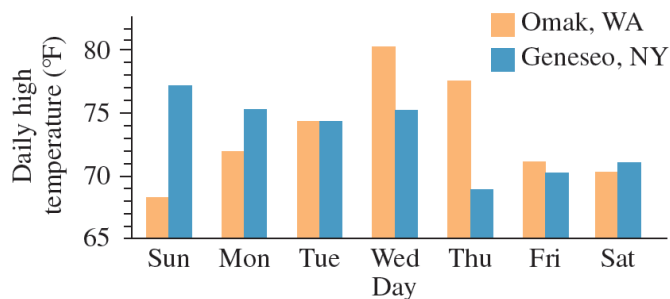


## Exercise 86

**Temperature Variation** The bar graph shows the daily high temperatures for Omak, Washington, and Geneseo, New York, during a certain week in June. Let  $T_O$  represent the temperature in Omak and  $T_G$  the temperature in Geneseo. Calculate  $T_O - T_G$  and  $|T_O - T_G|$  for each day shown. Which of these two values gives more information?



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### Solution

On Sunday,  $T_O = 68^\circ\text{F}$  and  $T_G = 77^\circ\text{F}$ . Therefore,  $T_O - T_G = -9^\circ\text{F}$  and  $|T_O - T_G| = 9^\circ\text{F}$ .

On Monday,  $T_O = 72^\circ\text{F}$  and  $T_G = 75^\circ\text{F}$ . Therefore,  $T_O - T_G = -3^\circ\text{F}$  and  $|T_O - T_G| = 3^\circ\text{F}$ .

On Tuesday,  $T_O = 74^\circ\text{F}$  and  $T_G = 74^\circ\text{F}$ . Therefore,  $T_O - T_G = 0^\circ\text{F}$  and  $|T_O - T_G| = 0^\circ\text{F}$ .

On Wednesday,  $T_O = 80^\circ\text{F}$  and  $T_G = 75^\circ\text{F}$ . Therefore,  $T_O - T_G = 5^\circ\text{F}$  and  $|T_O - T_G| = 5^\circ\text{F}$ .

On Thursday,  $T_O = 78^\circ\text{F}$  and  $T_G = 69^\circ\text{F}$ . Therefore,  $T_O - T_G = 9^\circ\text{F}$  and  $|T_O - T_G| = 9^\circ\text{F}$ .

On Friday,  $T_O = 71^\circ\text{F}$  and  $T_G = 70^\circ\text{F}$ . Therefore,  $T_O - T_G = 1^\circ\text{F}$  and  $|T_O - T_G| = 1^\circ\text{F}$ .

On Saturday,  $T_O = 70^\circ\text{F}$  and  $T_G = 71^\circ\text{F}$ . Therefore,  $T_O - T_G = -1^\circ\text{F}$  and  $|T_O - T_G| = 1^\circ\text{F}$ .

$T_O - T_G$  gives more information because we can tell which city has the higher temperature based on whether the difference is negative or positive.