2. Table A-2 is on two pages, with the left page for *negative* $z$ scores and the right page for *positive* $z$ scores.
3. Each value in the body of the table is a *cumulative area from the left* up to a vertical boundary above a specific $z$ score.
4. When working with a graph, avoid confusion between $z$ scores and areas.

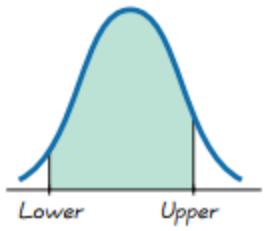
   **$z$ score:** ***Distance*** **along the horizontal scale of the standard normal distribution; refer to the leftmost column and top row of Table A-2.**

   **Area:** ***Region*** **under the curve; refer to the values in the *body* of Table A-2.**

5. The part of the $z$ score denoting hundredths is found across the top row of Table A-2.

**CAUTION** When working with a normal distribution, be careful to avoid confusion between $z$ scores and areas.

**Table 6-1** Methods for Finding Normal Distribution Areas

| | | |
|---|---|---|
| **Table A-2, STATDISK, Minitab, Excel**<br>Gives the cumulative area from the left up to a vertical line above a specific value of $z$. |  | **TABLE A-2** The procedure for using Table A-2 is described in the text.<br>**STATDISK** Select **Analysis, Probability Distributions, Normal Distribution.** Enter the $z$ value, then click on **Evaluate.**<br>**MINITAB** Select **Calc, Probability Distributions, Normal.** In the dialog box, select **Cumulative Probability, Input Constant.**<br>**EXCEL** Select **fx, Statistical, NORMDIST.** In the dialog box, enter the value and mean, the standard deviation, and "true." |
| **TI-83/84 Plus Calculator**<br>Gives area bounded on the left and bounded on the right by vertical lines above any specific values. |  | **TI-83/84** Press 2ND VARS **[2: normal cdf ( ],** then enter the two $z$ scores separated by a comma, as in (left $z$ score, right $z$ score). |

The following examples illustrate procedures that can be used with real and important applications introduced in the following sections.

## Example 3 Bone Density Test

A bone mineral density test can be helpful in identifying the presence or likelihood of osteoporosis, a disease causing bones to become more fragile and more likely to break. The result of a bone density test is commonly measured as a $z$ score. The