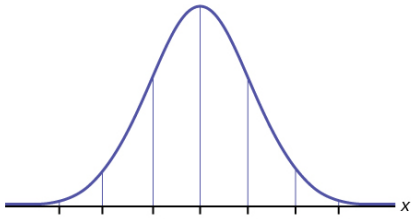
Ages of 150 College Students Name_____

19	21	23	24	17	22
22	18	19	20	18	20
21	17	22	19	21	19
23	22	18	18	22	24
23	72	40	21	15	15
23	18	24	22	24	22
19	17	23	37	20	21
15	21	22	23	17	19
24	17	19	51	23	19
20	21	18	21	17	17
21	58	17	23	21	23
21	18	22	23	18	20
17	20	30	23	24	29
18	18	18	21	66	60
22	24	17	40	19	17
18	20	23	21	18	25
30	22	18	20	24	20
22	17	21	38	18	17
24	50	21	23	19	21
22	24	21	18	22	35
24	31	24	18	23	17
18	18	21	19	20	18
22	20	16	22	18	24
35	23	23	22	22	23
19	21	23	32	16	20
23	17	22	44	18	17
17	20	23	18	20	26
17	24	21	22	22	24
22	19	22	17	22	40
22	18	18	18	24	21

Mean = 23
Standard Deviation = 9

Randomly choose 16 ages in the list provided, calculate the mean, and find a 50% confidence interval for the mean of your sample.



Step 1: Shade 50% of the normal curve centered on the median.

Step 2: Use the *z*-table to find the upper boundary *z*-score, $z_{\frac{\alpha}{2}}$.

Step 3: Substitute the values for $z_{\frac{\alpha}{2}}$, $\bar{X}$, *n*, and σ into the formula

$$P\left(\bar{X} - z_{\frac{\alpha}{2}}\left(\frac{\sigma}{\sqrt{n}}\right) < \mu < \bar{X} + z_{\frac{\alpha}{2}}\left(\frac{\sigma}{\sqrt{n}}\right)\right) = 0.50$$

Step 4: Write the confidence interval in interval notation.