

Use mental math

Determine $\sqrt{289}$

Know it's between 10;20.

The ones digit has to be a 3 or 7.

$$3^2 = 9$$

$$7^2 = 49$$

$$\sqrt{289}$$

$$\begin{array}{r} 13 \\ \times 13 \\ \hline 39 \\ 130 \\ \hline 169 \end{array}$$

$$\begin{array}{r} 17 \\ \times 17 \\ \hline 119 \\ 170 \\ \hline 289 \end{array}$$