

Determine $\sqrt{2209}$

Know it's between 50; 40

$$50^2 = 2500$$

$$40^2 = 1600$$

43 or 47

$$\begin{array}{l} \because 3 \times 3 = 9 \\ \quad \quad \quad \quad \quad 7 \times 7 = 49 \end{array}$$

$$\begin{array}{r} 43 \\ \times 43 \\ \hline 129 \\ 1720 \\ \hline 1849 \end{array}$$

$$\begin{array}{r} 47 \\ \times 47 \\ \hline 329 \\ 1880 \\ \hline 2209 \end{array}$$

Use mental math

Determine $\sqrt{289}$

Know it's between 10;20.

The ones digit has to be
a 3 or 7.

$$3^2 = 9$$

$$7^2 = 49$$

$$\sqrt{289}$$

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

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