

# Partial Products Cheat Sheet

This is similar to the distributive property except it is trying to break away from drawing the model. It is using the value of each digit in the problem.

1. Problem:  $78 \times 23$

2. Estimate first :  $80 \times 20 = 1600$  (so I know my answer should be close)

3. Write  $78$   
 $\times 23$

4. First multiply the tens by tens

$$\begin{array}{r} 78 \\ \times 23 \\ \hline 1400 \end{array} \text{ (70} \times \text{20)}$$

5. Second multiply ones by ten

$$\begin{array}{r} 78 \\ \times 23 \\ \hline 1400 \\ 210 \end{array} \text{ (70} \times \text{20)}$$
$$\text{210 (70} \times \text{3)}$$

6. Third multiply tens by ones

$$\begin{array}{r} 78 \\ \times 23 \\ \hline 1400 \\ 210 \\ 160 \end{array} \text{ (70} \times \text{20)}$$
$$\text{210 (70} \times \text{3)}$$
$$\text{160 (20} \times \text{8)}$$

7. Fourth multiply ones by one

$$\begin{array}{r} 78 \\ \times 23 \\ \hline 1400 \\ 210 \\ 160 \\ 24 \end{array} \text{ (70} \times \text{20)}$$
$$\text{210 (70} \times \text{3)}$$
$$\text{160 (20} \times \text{8)}$$
$$\text{24 (3} \times \text{8)}$$

8. Add all of the products together.

$$1,400 + 210 + 160 + 24 = 1,794$$