



Partial Products in Algorithms

Let's find partial products.

Warm-up

Which Three Go Together: Multiplying Large Numbers

Which 3 go together?

A

	5,000	300	40	2
4	20,000	?	160	8

B

$$(4 \times 5,000) + (4 \times 300) + (4 \times 40) + (4 \times 2)$$

C

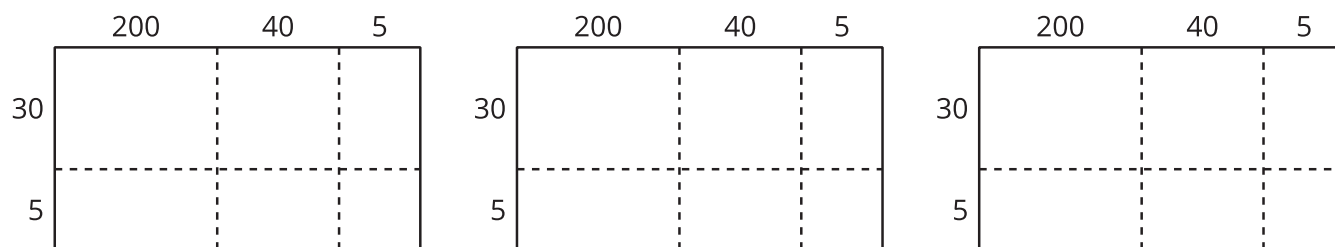
	5,000	300	42
4	20,000	1,200	168

D

	5,000	300	40	2
5	25,000	1,500	200	10

Activity 1

Partial Products Everywhere



1. Take turns. Choose a set of expressions that when added together have the same value as 245×35 . Use the diagrams if they are helpful.

2. Explain how you know the sum of your expressions has the same value as 245×35 .

3. What is the value of 245×35 ? Explain or show your reasoning.

Activity 2

Record Partial Products

Andre

$$\begin{array}{r} 2 4 5 \\ \times 3 5 \\ \hline 6, 0 0 0 \\ 1, 2 0 0 \\ 1 5 0 \\ 1, 0 0 0 \\ 2 0 0 \\ + 2 5 \\ \hline 8, 5 7 5 \end{array}$$

Clare

$$\begin{array}{r} 245 \\ \times 35 \\ \hline 25 \\ 200 \\ 1,000 \\ 150 \\ 1,200 \\ + 6,000 \\ \hline 8,575 \end{array}$$

1. How are Andre's and Clare's strategies alike? How are they different?

2. Create a list of equations that represent the partial products Andre and Clare found.