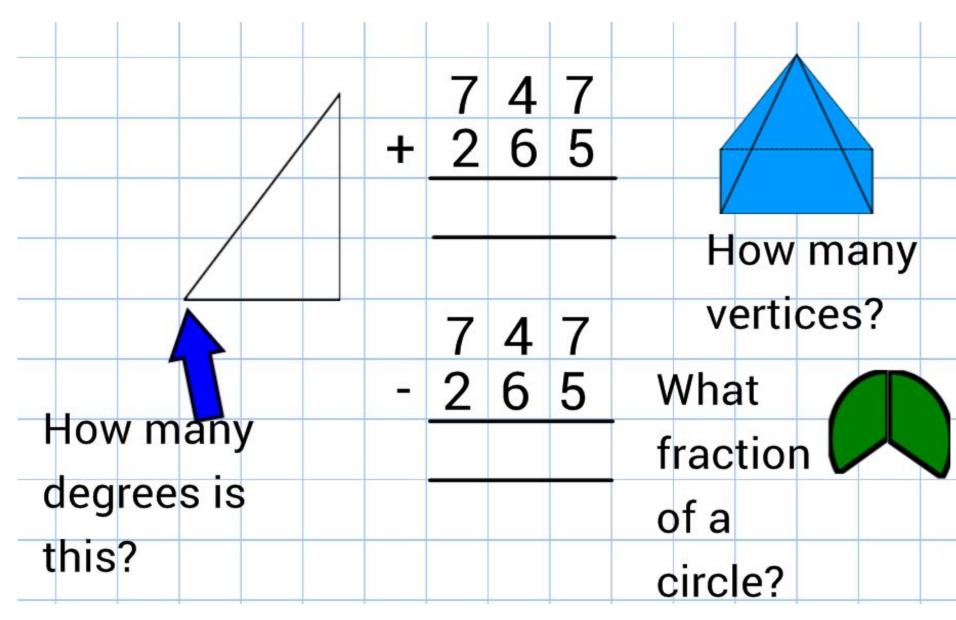# Lesson 3
Can I multiply using a formal method?

Fast 5

$$\begin{array}{r} 7\ 4\ 7 \\ +\ 2\ 6\ 5 \\ \hline \\ \hline \end{array}$$
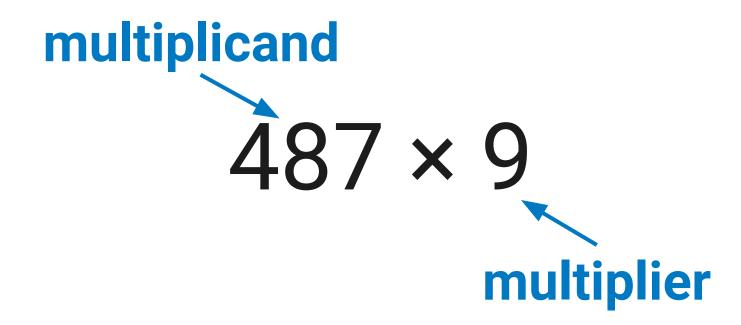
$$\begin{array}{r} 7\ 4\ 7 \\ -\ 2\ 6\ 5 \\ \hline \\ \hline \end{array}$$

How many degrees is this?

How many vertices?

What fraction of a circle?

Fast 5

$$747 + 265 = 1012$$

$$747 - 265 = 482$$

How many degrees is this? 45°

How many vertices? 5

What fraction of a circle? 2/3

How would you complete the following calculation?

multiplicand

$$487 \times 9$$

multiplier
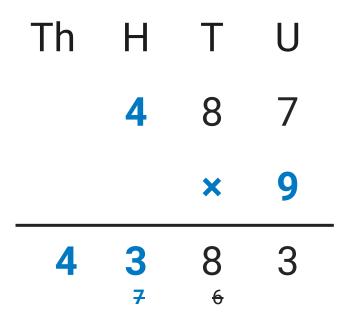
First, multiply the number in the ones column by the multiplier and regroup the tens over to the tens column.

Th	H	T	U
	4	8	7
		×	9
			3
		6	

Next, multiply the number in the tens column by the multiplier and regroup the hundreds to the hundreds column. Remember to add on the tens that were regrouped. Cross it out when added.

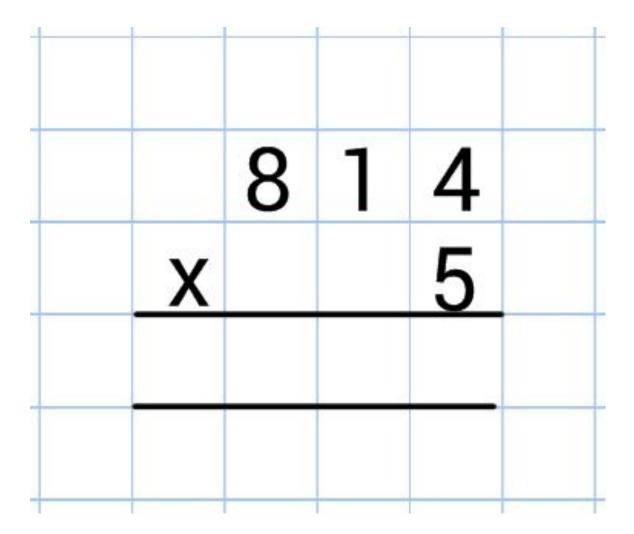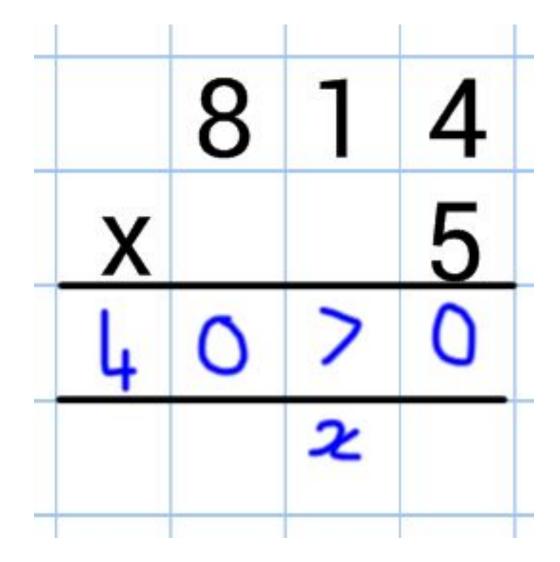| Th	H	T	U
	4	**8**	7
		×	**9**
		8	3
	7	~~6~~	

After that, multiply the number in the hundreds column by the multiplier and regroup the thousands into the thousands column. Remember to add on the hundreds that were regrouped. Cross out when added.
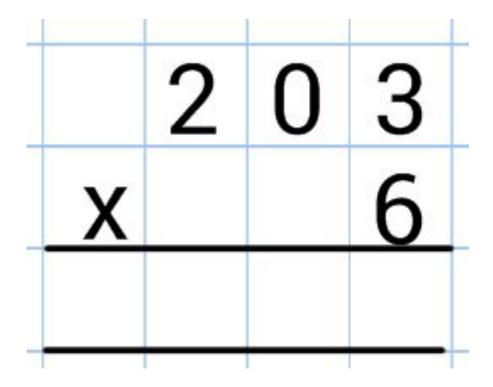
Th	H	T	U
	4	8	7
		×	**9**
4	**3**	8	3
	~~7~~	~~6~~	

$$
\begin{array}{r}
4\ 5\ 3 \\
\times\quad\ 4 \\
\hline
\\
\hline
\end{array}
$$

```
    4 5 3
  X     4
  ———————
  1 8 1 2
    2 1
```

$$
\begin{array}{r}
814 \\
\times \quad 5 \\
\hline
 \\
\hline
\end{array}
$$

```
      8  1  4
 X           5
-----------------
   4  0  >  0
-----------------
         x
```

```
    2 0 3
  x     6
  _____

  _____
```

$$
\begin{array}{r}
2\ 0\ 3 \\
\times\quad\quad 6 \\
\hline
1\ 2\ 1\ 8 \\
\hline
\downarrow
\end{array}
$$

$$\begin{array}{r} 2\ 2\ 3\ 2 \\ \times\qquad\quad 9 \\ \hline \\ \hline \end{array}$$

	2	2	3	2
X				9
2	0	0	8	8
	2	2	1	

$$\begin{array}{r} 4307 \\ \times \quad 3 \\ \hline \\ \hline \end{array}$$

```
      4 3 0 7
  x           3
  ─────────────
  1 2 9 2 1
  ─────────────
          2
```