

Errors and algorithms in multiplication or division

name: _____

For each problem, analyze what the student is doing, do the next 2 computations *the way the student would do them*, and then explain.

1.

$\begin{array}{r} 47 \\ \times 36 \\ \hline 1200 \\ 240 \\ 210 \\ 42 \\ \hline 1,692 \end{array}$	$\begin{array}{r} 38 \\ \times 25 \\ \hline 1600 \\ 150 \\ 160 \\ 40 \\ \hline 950 \end{array}$	$\begin{array}{r} 74 \\ \times 23 \\ \hline 1400 \\ 210 \\ 80 \\ 12 \\ \hline 1702 \end{array}$	$\begin{array}{r} 432 \\ \times 27 \\ \hline 8000 \\ 2866 \\ 608 \\ 210 \\ 46 \\ 14 \\ \hline 11,664 \end{array}$	$\begin{array}{r} 54 \\ \times 29 \\ \hline \end{array}$	$\begin{array}{r} 234 \\ \times 68 \\ \hline \end{array}$
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Explain the pattern, and why it works or doesn't work.

2.

$\begin{array}{r} 264 \\ \times 27 \\ \hline 448 \\ 1480 \\ \hline 1,928 \end{array}$	$\begin{array}{r} 247 \\ \times 36 \\ \hline 282 \\ 1410 \\ \hline 1,692 \end{array}$	$\begin{array}{r} 283 \\ \times 37 \\ \hline 581 \\ 2690 \\ \hline 3,271 \end{array}$	$\begin{array}{r} 3642 \\ \times 29 \\ \hline 5778 \\ 15940 \\ \hline 2,1718 \end{array}$	$\begin{array}{r} 42 \\ \times 36 \\ \hline \end{array}$	$\begin{array}{r} 63 \\ \times 29 \\ \hline \end{array}$
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Explain the pattern, and why it works or doesn't work.

3.

$\begin{array}{r} 446 \\ \times 8 \\ \hline 648 \end{array}$	$\begin{array}{r} 436 \\ \times 7 \\ \hline 492 \end{array}$	$\begin{array}{r} 22 \\ 137 \\ \times 4 \\ \hline 1208 \end{array}$	$\begin{array}{r} 46 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 39 \\ \times 4 \\ \hline \end{array}$
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Explain the pattern, and why it works or doesn't work.

4.

$$\begin{array}{r} 560R6 \\ 9 \overline{) 4560} \\ \underline{45} \\ 60 \\ \underline{54} \\ 6 \end{array}$$

$$\begin{array}{r} 730 \\ 8 \overline{) 5840} \\ \underline{5600} \\ 240 \\ \underline{240} \end{array}$$

$$\begin{array}{r} 370 \\ 7 \overline{) 2149} \\ \underline{21} \\ 49 \\ \underline{49} \end{array}$$

$$6 \overline{) 4818}$$

$$7 \overline{) 3525}$$

Explain the pattern, and why it works or doesn't work.

5.

$$\begin{array}{r} 44 \\ 2 \overline{) 88} \\ \underline{8} \\ 8 \\ \underline{8} \\ 0 \end{array}$$

$$\begin{array}{r} 14 \\ 4 \overline{) 164} \\ \underline{16} \\ 4 \\ \underline{4} \\ 0 \end{array}$$

$$\begin{array}{r} 67 \\ 3 \overline{) 228} \\ \underline{21} \\ 18 \\ \underline{18} \\ 0 \end{array}$$

$$\begin{array}{r} 39 \\ 5 \overline{) 465} \\ \underline{45} \\ 15 \\ \underline{15} \\ 0 \end{array}$$

$$3 \overline{) 75}$$

$$7 \overline{) 516}$$

Explain the pattern, and why it works or doesn't work.

6.

$$\begin{array}{r} 43R3 \\ 6 \overline{) 261} \\ \underline{240} \\ 21 \\ \underline{12} \\ 9 \\ \underline{6} \\ 3 \end{array} \begin{array}{l} 40 \\ 2 \\ 1 \\ 43 \end{array}$$

$$\begin{array}{r} 236R5 \\ 8 \overline{) 1893} \\ \underline{1600} \\ 293 \\ \underline{160} \\ 133 \\ \underline{80} \\ 53 \\ \underline{32} \\ 21 \\ \underline{16} \\ 5 \end{array} \begin{array}{l} 200 \\ 20 \\ 10 \\ 4 \\ 2 \\ 236 \end{array}$$

$$\begin{array}{r} 87R4 \\ 14 \overline{) 1222} \\ \underline{1120} \\ 102 \\ \underline{56} \\ 46 \\ \underline{28} \\ 18 \\ \underline{14} \\ 4 \end{array} \begin{array}{l} 80 \\ 4 \\ 2 \\ 1 \\ 87 \end{array}$$

$$7 \overline{) 441}$$

Explain the pattern, and why it works or doesn't work.