

Investigating the Order of Two Operations

NCTM Standards 1, 2, 7, 8, 9, 10

Record the outputs.

$$\begin{array}{r} 12 \text{ oz} \\ \times 1 \\ \hline \div 2 \\ \hline 6 \text{ oz} \end{array}$$

1

$$\begin{array}{r} 8 \text{ ft} \\ \times 3 \\ \hline \div 4 \\ \hline \end{array}$$

2

$$\begin{array}{r} \$15 \\ \times 7 \\ \hline \div 3 \\ \hline \end{array}$$

3

$$\begin{array}{r} 30\text{¢} \\ \times 10 \\ \hline \div 15 \\ \hline \end{array}$$

4

$$\begin{array}{r} 42 \text{ oz} \\ \times 2 \\ \hline \div 7 \\ \hline \end{array}$$

5

$$\begin{array}{r} 12 \text{ ft} \\ \times 10 \\ \hline \div 5 \\ \hline \end{array}$$

6

$$\begin{array}{r} \$11 \\ \times 5 \\ \hline \div 5 \\ \hline \end{array}$$

7

$$\begin{array}{r} 55\text{¢} \\ \times 3 \\ \hline \div 11 \\ \hline \end{array}$$

Fill in the missing numbers.

8

$$\begin{array}{r} 12 \text{ in.} \\ \times \square \\ \hline \div 6 \\ \hline 8 \text{ in.} \end{array}$$

9

$$\begin{array}{r} 12 \text{ in.} \\ \times 6 \\ \hline \div \square \\ \hline 8 \text{ in.} \end{array}$$

10

$$\begin{array}{r} 12 \text{ in.} \\ \times \square \\ \hline \div 3 \\ \hline 8 \text{ in.} \end{array}$$

11

$$\begin{array}{r} 12 \text{ in.} \\ \times 10 \\ \hline \div \square \\ \hline 8 \text{ in.} \end{array}$$

12

$$\begin{array}{r} \$90 \\ \times 4 \\ \hline \div \square \\ \hline \$60 \end{array}$$

13

$$\begin{array}{r} \$90 \\ \times \square \\ \hline \div 3 \\ \hline \$60 \end{array}$$

14

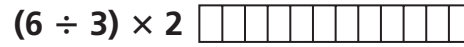
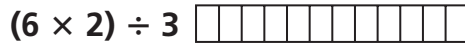
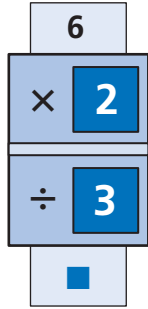
$$\begin{array}{r} \$90 \\ \times 6 \\ \hline \div \square \\ \hline \$60 \end{array}$$

15

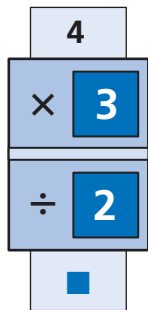
$$\begin{array}{r} \$90 \\ \times \square \\ \hline \div 15 \\ \hline \$60 \end{array}$$

Shade the bars to show the multiplying and dividing performed by the fraction machines.

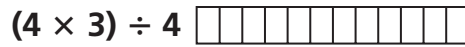
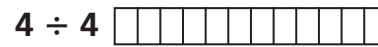
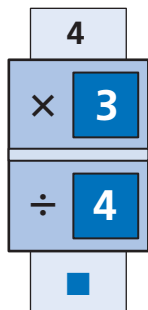
16



17



18



19 Challenge Make up an example in which it is more convenient to divide first. Make another in which it is more convenient to multiply first.

Why is it more convenient to multiply first in your second example?

