

# Multiplication and Division Cluster Problems

Cluster problems help you use what you know about easier problems to solve harder problems.

1. Solve the problems in each cluster.
2. Use one or more of the problems in the cluster to solve the final problem, along with other problems if you need them.

Solve these cluster problems:

$$24 \times 10 = \underline{240} \quad 24 \times 3 = \underline{72}$$

$$24 \times 20 = \underline{480} \quad 24 \times 30 = \underline{720}$$

Now solve this problem:

$$24 \times 31 = \underline{744}$$

How did you solve the final problem?

*I figured out that  $24 \times 30$  would be 720 because  $24 \times 10 = 240$ , and  $240 + 240 + 240 = 720$ .*

*I need one more group of 24.*

*That's  $720 + 24 = 744$ .*

*So,  $24 \times 31 = 744$ .*

Solve these cluster problems:

$$10 \times 12 = \underline{120}$$

$$5 \times 12 = \underline{60}$$

Now solve this problem:

$$192 \div 12 = \underline{16}$$

How did you solve the final problem?

*I thought of  $192 \div 12$  as  $\underline{\quad} \times 12 = 192$ .  $10 \times 12 = 120$  and  $5 \times 12 = 60$ , so  $15 \times 12 = 120 + 60 = 180$ .*

*I need one more 12 to get to 192.*

*$16 \times 12 = 192$*

*So,  $192 \div 12 = 16$ .*

Solve these cluster problems:

$$54 \div 6 = \underline{9}$$

$$540 \div 6 = \underline{90}$$

Now solve this problem:  $6 \overline{)546}$

**91**

How did you solve the final problem?

*After I knew  $540 \div 6 = 90$ , then I knew I needed one more group of 6 because  $546 = 540 + 6$ .*

*So,  $546 \div 6 = 91$ .*