

# Estimating Missing Factors and Quotients

NCTM Standards 1, 2, 6, 7, 8, 9, 10

**Complete the puzzles. Begin by rewriting each division sentence as a multiplication sentence.**

**Rule I:** Use only numbers from the green block to fill in the green boxes.

**Rule II:** Try to use the largest number possible at each step.

**Rule III:** Use a zero for any green box that you do not need.

0	1	2	3	4	5	6	7	8	9
0	10	20	30	40	50	60	70	80	90

**Hint:** Fill in the green boxes before the blue boxes.

<p><b>1</b>     <math>136 \div 8 = \square</math></p> <p><math>\square \times \square = 136</math></p>	<p><b>2</b>     <math>712 \div 8 = \square</math></p> <p><math>\square \times \square = \square</math></p>	<p><b>3</b>     <math>216 \div 9 = \square</math></p> <p><math>\square \times \square = \square</math></p>
<p><math>8 \times \square = \square</math></p>	<p><math>8 \times \square = \square</math></p>	<p><math>9 \times \square = \square</math></p>
<p>What's left? <math>\square</math></p> <p><math>8 \times \square = \square</math></p>	<p><math>\square</math></p> <p><math>8 \times \square = \square</math></p>	<p><math>\square</math></p> <p><math>9 \times \square = \square</math></p>
<p>What's left? <math>\square</math></p> <p><math>8 \times \square = \square</math></p>	<p><math>\square</math></p> <p><math>8 \times \square = \square</math></p>	<p><math>\square</math></p> <p><math>9 \times \square = \square</math></p>
<p>What's left? <math>\square</math></p>	<p><math>\square</math></p>	<p><math>\square</math></p>

**Use numbers, words, or pictures to solve these problems.**

**4** Tim and four of his friends found 185 nickels! They shared the coins so that each ended up with the same number of nickels. How many nickels does each have? Write a number sentence to explain your answer.

\_\_\_\_\_ nickels

**5** The police department spent \$357 to buy seven identical winter coats for their officers. How much did each coat cost? Write a number sentence to explain your answer.

\$ \_\_\_\_\_



**6 Challenge** State Elementary School is having a field day. All 283 students were put onto six different teams as evenly as possible. Did all the teams have the same number of students? Explain your answer.

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