Name $\qquad$ Date $\qquad$

1. Fill in the blanks using your knowledge of place value units and basic facts.
a. $23 \times 20$
d. $410 \times 400$

Think: 23 ones $\times 2$ tens $=$ $\qquad$ tens
$23 \times 20=$ $\qquad$

41 tens $\times 4$ hundreds $=164$ $\qquad$
$410 \times 400=$ $\qquad$
b. $230 \times 20$

Think: 23 tens $\times 2$ tens $=$ $\qquad$
$230 \times 20=$ $\qquad$
e. $3,310 \times 300$
$\qquad$ tens $\times$ $\qquad$ hundreds $=993$ $\qquad$
$3,310 \times 300=$ $\qquad$
c. $41 \times 4$

41 ones $\times 4$ ones $=164$ $\qquad$
$41 \times 4=$ $\qquad$
f. $500 \times 600$
$\qquad$ hundreds $\times$ $\qquad$ hundreds $=30$ $\qquad$
$500 \times 600=$ $\qquad$
$\qquad$
2. Determine if these equations are true or false. Defend your answer using your knowledge of place value and the commutative, associative, and/or distributive properties.
a. 6 tens $=2$ tens $\times 3$ tens
b. $44 \times 20 \times 10=440 \times 2$
c. 86 ones $\times 90$ hundreds $=86$ ones $\times 900$ tens
d. $64 \times 8 \times 100=640 \times 8 \times 10$
e. $57 \times 2 \times 10 \times 10 \times 10=570 \times 2 \times 10$
3. Find the products. Show your thinking. The first row gives some ideas for showing your thinking.
a. $7 \times 9$
$=63$

$$
\begin{aligned}
& 7 \times 90 \\
& =63 \times 10 \\
& =630
\end{aligned}
$$

$$
70 \times 90
$$

$$
70 \times 900
$$

$$
=(7 \times 10) \times(9 \times 10)
$$

$$
=(7 \times 9) \times(10 \times 100)
$$

$$
=(7 \times 9) \times 100
$$

$$
=63,000
$$

$$
=6,300
$$

b. $45 \times 3$
$45 \times 30$
$450 \times 30$
$450 \times 300$
c. $40 \times 5$
$40 \times 50$
$40 \times 500$
$400 \times 5,000$
d. $718 \times 2$
$7,180 \times 20$
$7,180 \times 200$
$71,800 \times 2,000$
4. Ripley told his mom that multiplying whole numbers by multiples of 10 was easy because you just count zeros in the factors and put them in the product. He used these two examples to explain his strategy.

a. Ripley's mom said his strategy won't always work. Why not? Give an example.
5. The Canadian side of Niagara Falls has a flow rate of 600,000 gallons per second. How many gallons of water flow over the falls in 1 minute?
6. Tickets to a baseball game are $\$ 20$ for an adult and $\$ 15$ for a student. A school buys tickets for 45 adults and 600 students. How much money will the school spend for the tickets?

Name $\qquad$ Date $\qquad$

1. Find the products.
a. $1,900 \times 20$
b. $6,000 \times 50$
c. $250 \times 300$
2. Explain how knowing $50 \times 4=200$ helps you find $500 \times 400$.

Name $\qquad$ Date $\qquad$

1. Fill in the blanks using your knowledge of place value units and basic facts.
a. $43 \times 30$

Think: 43 ones $\times 3$ tens $=$ $\qquad$ tens
$43 \times 30=$ $\qquad$
b. $430 \times 30$

Think: 43 tens $\times 3$ tens $=$ $\qquad$ hundreds
$430 \times 30=$ $\qquad$
c. $830 \times 20$

Think: 83 tens $\times 2$ tens $=166$ $\qquad$
$830 \times 20=$ $\qquad$
d. $4,400 \times 400$
$\qquad$ hundreds $\times$ $\qquad$ hundreds $=176$ $\qquad$
$4,400 \times 400=$ $\qquad$
e. $80 \times 5,000$
$\qquad$ tens $\times$ $\qquad$ thousands $=40$ $\qquad$ $80 \times 5,000=$ $\qquad$
2. Determine if these equations are true or false. Defend your answer using your knowledge of place value and the commutative, associative, and/or distributive properties.
a. 35 hundreds $=5$ tens $\times 7$ tens
b. $770 \times 6=77 \times 6 \times 100$
c. 50 tens $\times 4$ hundreds $=40$ tens $\times 5$ hundreds
d. $24 \times 10 \times 90=90 \times 2,400$
3. Find the products. Show your thinking. The first row gives some ideas for showing your thinking.
a. $5 \times 5$
$=25$

$$
\begin{aligned}
& 5 \times 50 \\
& =25 \times 10 \\
& =250
\end{aligned}
$$

$50 \times 50$
$50 \times 500$
$=(5 \times 10) \times(5 \times 10)=(5 \times 5) \times(10 \times 100)$
$=(5 \times 5) \times 100=25,000$
$=2,500$
b. $80 \times 5$
$80 \times 50$
$800 \times 500$
$8,000 \times 50$
c. $637 \times 3$
$6,370 \times 30$
$6,370 \times 300$
$63,700 \times 300$
4. A concrete stepping stone measures 20 inches square. What is the area of 30 such tiles?
5. A number is 42,300 when multiplied by 10 . Find the product of this number and 500 .

