7.1 Multiplying and Dividing Monomials

MathLinks 9, **pages 254–263**

Key Ideas Review

Use the following terms to complete #1 and 2.

dividend	division	exponent rules	numerical coefficients
product	*x*-tiles	−*x*-tiles	

1. a) This is a model of multiplication.

The x^2-tiles represent the _____.

The factors are represented by _____.
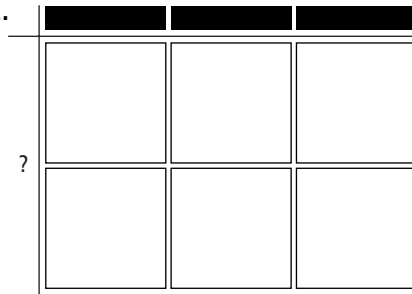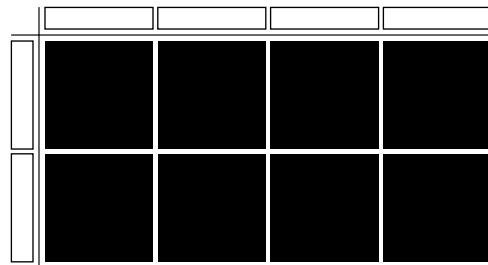
b) This is a model of _____.

The six $-x^2$-tiles represent the _____.

The divisor is represented by three _____.

c) To multiply monomials algebraically, you can

multiply the _____

_____ and then use the

_____ _____

to multiply the variables.

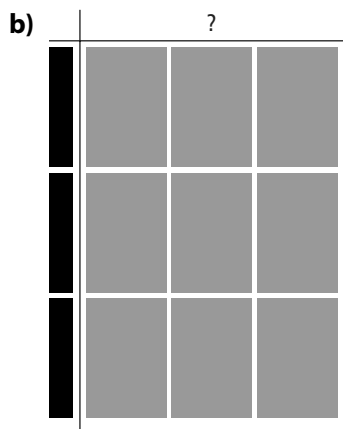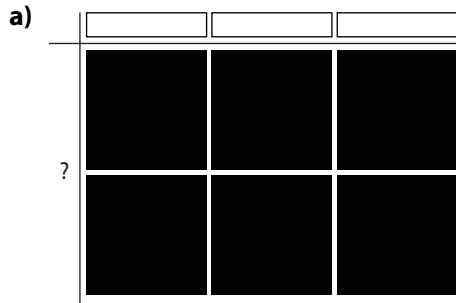**2.** Rewrite the sentence in #1c) to reflect a similar strategy for dividing monomials.

_____

_____

Check Your Understanding

3. Sketch a model of each multiplication statement. What is the product?

a) $(4x)(-2x)$

b) $(-4x)(-3x)$

4. Write a division statement for each model and solve. The grey tiles in b) are *xy*-tiles.

a)

b)

5. Use models to solve the following.
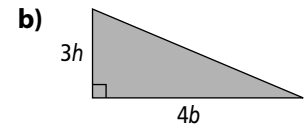
a) $10xy \div 5y$

b) $15x^2 \div 5x$

6. Solve.

a) $(-6a)(-4a)$ **b)** $(24x)\frac{x}{2}$

c) $\frac{20x^2}{-x}$ **d)** $-32ac \div -8ac$

7. Write an expression for the area of each shape. What is the simplified expression for the area of each shape?

a)

4x

12x

b)

3h

4b

8. A rectangular field is 7 m long and has an area of 84 m². Write an equation you can use to determine the field's width. What is the field's width?

9. Determine the missing dimension in each figure. Show your work.

a)

$A = 27x^2$ 3x

?

b)

7x

$A = 14x^2$

?