

## Lesson 10: Writing and Expanding Multiplication Expressions

### Classwork

#### Example 1

Write each expression using the fewest number of symbols and characters. Use math terms to describe the expressions and parts of the expressions.

a.  $6 \times b$   $6b$

$6$  is the coefficient and a factor.

$b$  is the variable and a factor.

$6b$  is the product and also a term.

b.  $4 \cdot 3 \cdot h$   $12h$

$12$  is the coefficient and a factor.

$h$  is the variable and factor.

$12$  is the product and also a term.

c.  $2 \times 2 \times 2 \times a \times b$   $8ab$

$8$  is the coefficient and a factor.

$a$  and  $b$  are both variables and factors.

$8ab$  is the product and also a term.

d.  $5 \times m \times 3 \times p$   $15mp$

$15$  is the coefficient and a factor.

$m$  and  $p$  are the variables and factors.

$15mp$  is the product and also a term.

e.  $1 \times g \times w$   $1gw$  or  $gw$

$g$  and  $w$  are variables & factors.

$1$  is the coefficient and factor.

$gw$  is the product & also a term.

## Example 2

To expand multiplication expressions, we will rewrite the expressions by including the “ $\cdot$ ” back into the expressions.

a.  $5g$   $5 \cdot g$

b.  $7abc$   $7 \cdot a \cdot b \cdot c$

c.  $12g$   $12 \cdot g$

d.  $3h \cdot 8$   $3 \cdot h \cdot 8$

e.  $7g \cdot 9h$   $7 \cdot g \cdot 9 \cdot h$

## Example 3

a. Find the product of  $4f \cdot 7g$ .  $4 \cdot f \cdot 7 \cdot g$   
 $28fg$

b. Multiply  $3de \cdot 9yz$ .  $3 \cdot d \cdot e \cdot 9 \cdot y \cdot z$   
 $27deyz$

c. Double the product of  $6y$  and  $3bc$ .  $6 \cdot y \cdot 3 \cdot b \cdot c$   
 $18bcy$  double by multiplying by 2  
 $= 36bcy$