1 EXAMPLE Simplify each expression.

a. $-3(-11)$ $-3(-11) = 33$ The product of two negative numbers is positive.

b. $-6\left(\frac{3}{4}\right)$ $-6\left(\frac{3}{4}\right) = -\frac{18}{4}$ The product of a positive number and a negative number is negative.

$= -4\frac{1}{2}$ Write $-\frac{18}{4}$ as a mixed number.

2 EXAMPLE Evaluate $5rs$ for $r = -18$ and $s = -5$.

$5rs = 5(-18)(-5)$ Substitute -18 for r and -5 for s.
$= -90(-5)$ $5(-18)$ results in a negative number, -90.
$= 450$ $-90(-5)$ results in a positive number, 450.

3 EXAMPLE Use the expression $-5.5\left(\frac{a}{1000}\right)$ to calculate the change in temperature for an increase in altitude a of 7200 ft.

$-5.5\left(\frac{a}{1000}\right) = -5.5\left(\frac{7200}{1000}\right)$ Substitute 7200 for a.

$= -5.5(7.2)$ Divide within parentheses.
$= -39.6°\text{F}$ Multiply.

The change in temperature is $-39.6°\text{F}$.

4 EXAMPLE Use the order of operations to simplify each expression.

a. $-0.2^4 = -(0.2 \cdot 0.2 \cdot 0.2 \cdot 0.2)$ Write as repeated multiplication.
$= -0.0016$ Simplify.

b. $(-0.2)^4 = (-0.2)(-0.2)(-0.2)(-0.2)$ Write as repeated multiplication.
$= 0.0016$ Simplify.

5 EXAMPLE Simplify each expression.

a. $70 \div (-5) = -14$ The quotient of a positive number and a negative number is negative.

b. $-54 \div (-9) = 6$ The quotient of a negative number and a negative number is positive.