1.7 Mult. & Div. of Real Numbers

Need To Know

- Multiplication of Signed Numbers
- Division of Signed Numbers
  - Apply to: Integers, Decimals and Fractions

Sign Patterns in Multiplication

Look at these multiplication problems and draw conclusions about sign results.

(3)(2) =	3(-2) =
(3)(1) =	2(-2) =
(3)(0) =	1(-2) =
(3)(-1) =	0(-2) =
(3)(-2) =	-1(-2) =

Practice - Multiplication

Summary of sign pattern for multiplication

(+)(+) = ____ (+)(–) = ____

(–) (–) = ____ (–)(+) = ____

Simplify each expression

(-4)(-8)(-1) -3·(-5)·(-2)·(-1)

The product of an odd # of negatives is ____

The product of an even # of negatives is ____

Practice - Multiplication

Simplify each expression

$-9\left(\frac{1}{3}\right)$

$-\frac{6}{5}\left(-\frac{2}{7}\right)$

Recall fraction multiplication

$$\frac{a}{b}\cdot\frac{c}{d}=\frac{ac}{bd}$$

Division with Signed Numbers

Recall: $a \div b = a \cdot \frac{1}{b} = \frac{a}{b}$

Sign rules for division work just as multiplication.

- (+) ÷ (+) = (+)
- (–) ÷ (–) = (+)
- (+) ÷ (–) = (–)
- (–) ÷ (+) = (–)

Fraction Facts

Top = Numerator .

Bottom = Denominator

$\frac{0}{5}$ $\frac{5}{0}$

Division of Fractions

Recall – Division of fractions is the same as multiplication by the reciprocal.

$$\frac{\mathbf{a}}{\mathbf{b}} \div \frac{\mathbf{c}}{\mathbf{d}} = \frac{\mathbf{a}}{\mathbf{b}} \cdot \frac{\mathbf{d}}{\mathbf{c}}$$

$$-\frac{7}{9} \div \left(\frac{1}{6}\right)$$

$$-15 \div \left(-\frac{3}{2}\right)$$

end