

Lesson 11: Expressions with Rational Numbers

Let's develop our signed number sense.

11.1: True or False: Rational Numbers

Decide if each statement is true or false. Be prepared to explain your reasoning.

1. $(-38.76)(-15.6)$ is negative *False*

2. $10,000 - 99,999 < 0$ *True*

3. $(\frac{3}{4})(-\frac{4}{3}) = 0$ *False*

4. $(30)(-80) - 50 = 50 - (30)(-80)$
 $\begin{matrix} 30 \cdot -80 \\ -240 + 50 = 50 + 240 \\ -290 = 290 \end{matrix}$ *False*

11.2: Card Sort: The Same But Different

Your teacher will give you a set of cards. Group them into pairs of expressions that have the same value.

$1+2$ (2)	$1+(-2)$ (-1)	1.4 (4)	$1 \div \frac{1}{4}$ (4)
$1-2$ (-1)	$1+(-2)$ (-1)	1.4 (-4)	$1 \div (-\frac{1}{4})$ (-4)
$-10+7$ (-3)	$-10-(-7)$ (-3)	$8 \div 4$ (2)	$8 \cdot \frac{1}{4}$ (2)
$-15 \div (-6)$ ($2\frac{1}{2}$)	$15 \cdot \frac{1}{6}$ ($2\frac{1}{2}$)	$15 \div (-6)$ ($-2\frac{1}{2}$)	$-15 \cdot \frac{1}{6}$ ($-2\frac{1}{2}$)

$$A = 10 \text{ And } B = -2$$

Find the value for each expression

$$\textcircled{1} -b =$$

$$- -2 =$$

$$+2 =$$

★ double negatives
= positive

$$\textcircled{2} b^3$$

$$b \cdot b \cdot b$$

$$-2 \cdot -2 \cdot -2$$

✓

$$4 \cdot -2 = -8$$

$$\textcircled{3} a \cdot \frac{1}{b}$$

$$10 \cdot \frac{1}{-2}$$

$$-\frac{10}{2} = -5$$

$$\textcircled{4} a/b \div a$$

$$\frac{10}{-2} \div 10$$

$$-5 \div 10$$

$$-\frac{1}{2}$$

$$\textcircled{5} a + \frac{1}{b}$$

$$10 + -\frac{1}{2}$$

$$9\frac{1}{2}$$

$$\textcircled{6} \left(\frac{1}{b}\right)^2$$

$$-\frac{1}{2} \cdot -\frac{1}{2} = \frac{1}{4}$$

★ Negative signs must have another to cancel it out to positive. If it doesn't it remains Negative.