

RATIONAL NUMBERS OPERATIONS

Addition (+)

- **Same Signs:** Add absolute values and keep the common sign. $(-5) + (-3) = -8$
- **Different Signs:** Subtract the smaller absolute value from the larger. Use the sign of the larger number. $(-10) + 4 = -6$

Subtraction (-)

- **Rule:** Add the **opposite** (Additive Inverse). Change subtraction to addition and change the sign of the second number. $a - b = a + (-b)$ $5 - (-2) = 5 + 2 = 7$

Multiplication (•)

- **Same Signs:** Result is always **positive**. $(-) \cdot (-) = (+)$
- **Different Signs:** Result is always **negative**. $(+) \cdot (-) = (-)$

Division (÷)

- **Rules:** Same sign rules as multiplication apply.
- **Fractions:** Multiply by the **reciprocal** (Keep-Change-Flip). $(a/b) \div (c/d) = (a/b) \cdot (d/c)$

Key Reminders

• Common Denominators required for + and -
• Division by Zero is **Undefined**
• Absolute Value $|x|$ is always **Positive**