1.6 Calculating with Rational Numbers

GOAL

Use number sense to compare the results of adding, subtracting, multiplying, and dividing rationals.

EXPLORE the Math

Jia-Wen noticed that, for $-\frac{2}{3}$ and $\frac{4}{5}$,

$$\left(-\frac{2}{3}\right) - \frac{4}{5} < \left(-\frac{2}{3}\right) \div \frac{4}{5} < \left(-\frac{2}{3}\right) \times \frac{4}{5} < \left(-\frac{2}{3}\right) + \frac{4}{5}$$

The order from least to greatest is $-$ $\div$ $\times$ $+$

But for $-\frac{2}{3}$ and $\frac{1}{3}$,

$$\left(-\frac{2}{3}\right) \div \frac{1}{3} < \left(-\frac{2}{3}\right) - \frac{1}{3} < \left(-\frac{2}{3}\right) + \frac{1}{3} < \left(-\frac{2}{3}\right) \times \frac{1}{3}$$

The order from least to greatest is $\div$ $-$ $+$ $\times$

? How can you choose pairs of rational numbers to get four different possible orderings as the result of adding, subtracting, multiplying, and dividing them?