Rational & Irrational Operations

CCLS: HSN.RN.B.3

Explain why the sum or product of two rational numbers is rational; that the sum of a rational number and an irrational number is irrational; and that the product of a nonzero rational number and an irrational number is irrational.

Examples

Rational

Irrational

What is the main idea?
(reminder: drawing a diagram is not harmful to your health!)

Notes:

Rational

Irrational

Can it be expressed as a ratio of two integers?

YES

NO
RATIONAL - RATIONAL SUM

\[ \frac{a}{b} + \frac{c}{d} \]

The sum of two rational numbers is

\[ \frac{3}{4} + \frac{1}{2} \]

RATIONAL - IRRATIONAL SUM

\[ \frac{a}{b} + \sqrt{31} \]

The sum of a nonzero rational number and an irrational number is:

\[ 3 + 2.7432... \]

RATIONAL - RATIONAL PRODUCT

\[ \frac{a}{b} \cdot \frac{c}{d} \]

The product of two rational numbers is

\[ \frac{9}{4} \cdot \frac{8}{3} \]

RATIONAL - IRRATIONAL PRODUCT

\[ \frac{a}{b} \cdot \sqrt{31} \]

The product of a nonzero rational number and an irrational number is:

Follow @mashupmath on Instagram for daily math tips & infographics and use #MASHUPanswerkey to get the answers to the practice problems!

Copyright ©, MashUp Math, 2015. All Rights Reserved.