1.5 Closure Property

Closure Property - Every pair of numbers chosen from a given set with a given operation results in a number from the given set.

Whole numbers - $\{0, 1, 2, 3, 4 \ldots\}$
    addition – closed
    Subtraction – not closed $_{ooo}$ $\boxed{3 - 5}$
    multiplication – closed
    division – not closed $_{ooo}$ $\dfrac{9}{5}$

Integers - $\{\ldots -3, -2, -1, 0, 1, 2, 3 \ldots\}$
    addition – closed
    Subtraction – closed
    multiplication – closed
    division – not closed $_{ooo}$ $\dfrac{2}{-3}$
    Squaring – closed

Rational numbers - any number that can be written as a fraction
    addition – closed
    Subtraction – closed
    multiplication – closed
    division – not closed $_{ooo}$ $\dfrac{2}{0}$
    squaring – closed

Real numbers - any # that can be found on the # line

Closed for $+, -, \times$, squaring

{-1, 0, 1} -
    addition – not closed $_{ooo}$ $\boxed{1 + 1 = 2}$
    subtraction – not closed $_{ooo}$ $\boxed{1 - ^-1 = 2}$
    multiplication – closed
    division – not closed $_{ooo}$ $\dfrac{1}{0}$
    Squaring – closed

HOMEWORK:

Worksheet - HW 1.5 Properties 2