

1.2 Rational Numbers in Decimal Form

(pp. 14-17)

Name: _____

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Learning Goals: I will learn to

- perform operations with decimal numbers
- use mental math to estimate reasonable answers


Develop Understanding

Example 1: Add or Subtract Rational Numbers in Decimal Form (p. 15)

Without using a calculator, explain whether the answer will be a positive or negative value. Then, use a calculator to determine the actual answer.

a) $2.65 + (-3.81)$ → **negative** - the negative value is "bigger" than the positive value

= -1.16



b) $-5.96 - (-6.83)$ → **positive** - subtracting a negative is like adding a positive and the positive value is larger.

$-5.96 + 6.83$

= 0.87

Example 2: Multiply or Divide Rational Numbers in Decimal Form (p. 16)

Explain whether the sign of the answer will be positive or negative. Estimate the answer. Then, correctly use a calculator to determine the exact answer.

a) 9.49×5.08

positive $\oplus \times \oplus = \oplus$

estimate: about 10×5
(a bit less than) 50

= 48.2092

b) $2.4 + -1.4$

$= -1.714$

negative $\oplus \div \ominus = \ominus$

estimate: about $2 \div -1$
 $= -2$

c) $-2.5(2.5)$

$= -6.25$

negative $\ominus \times \oplus = \ominus$

estimate: between $-2 \times 2 = -4$
and $-3 \times 3 = -9$

about -6 or -7

d) $-0.86 + -0.42$

$= 2.04761\dots$

$= 2.048$

positive $\ominus \div \ominus = \oplus$

estimate: about $-1 \div -0.5$
 $= 2$

Key Ideas

- Adding a negative rational number to another rational number is equivalent to subtracting the corresponding positive number.
- Subtracting a negative rational number is equivalent to adding the corresponding positive number.
- A negative rational number multiplied by or divided by another negative rational number always gives an answer that is positive.
- A positive rational number multiplied by or divided by a negative rational number always gives an answer that is negative.

Sign rules:

$(+) \times (-) = (-)$ $(-) \times (-) = (+)$
 $(+) \div (-) = (-)$ $(-) \div (-) = (+)$