Lesson 2.2

Adding Rational Numbers (Decimals)

Essential Question

How can you use what you know about adding integers to add decimals?

Same rules

Example 1:

Find −4.05 + 7.62.

greater abs. value always on top

$$\begin{array}{r} {\scriptstyle 5\,1} \\ 7.62 \\ -\,4.05 \\ \hline 3.57 \end{array}$$

*Team Positive will win, but by how much? Subtract their absolute values to find out

$$-4.05+7.62=\boxed{3.57}$$

Add.

1. −8.15 + (−4.3)

Be sure to line up the decimals!

$$\begin{array}{r} 8.15 \\ +\,4.30 \\ \hline 12.45 \end{array}$$

*Both on team negative, so they join forces. Add their absolute values and make your answer negative.

$$-8.15+(-4.3)=\boxed{-12.45}$$

Example 2:

Evaluate $2x + y$ when $x = 3.4$ and $y = -1.2$

$2(3.4)+(-1.2)$

$6.8+(-1.2)$

5.6

$3.4 \times 2 = 6.8$

$6.8 - 1.2 = 5.6$

Evaluate the expression when $a = -0.7$ and $b = 3.45$

2. $|a + b|$

*Take the absolute value after doing the operation.

$|(-0.7)+(3.45)|$

$|2.75|$

2.75

$3.45 - 0.70 = 2.75$

Example 3:

The table shows the annual profits (in billions of dollars) of a financial company from 2008 to 2012. Positive numbers represent *gains*, and negative numbers represent *losses*. Which statement describes the profit over the five-year period?

Year	Profit (billions of dollars)
2008	−1.7
2009	−4.75
2010	1.7
2011	0.85
2012	3.6

A. gain of $0.3 billion

B. gain of $30 million

$-1.7+(-4.75)+1.7+0.85+3.6$

$3.60 + 0.85 = 4.45$

$-4.75 + 4.45$ → Team Negative wins, answer will be a loss

-0.30

C. loss of $3 million

D. loss of $300 million

$4.75 - 4.45 = 0.30$

$1{,}000{,}000{,}000 \times 0.3$ 1 billion

$300{,}000{,}000$

$300 million