

Study Guide

Chapter 2 Test

2.1: Use Integers and Rational Numbers

- Be able to classify numbers as whole, integer, rational and irrational using all names that apply

Ex: -7 integer, rational

Ex: $\sqrt{17}$ irrational

Ex: $\frac{1}{2}$ rational

- Be able to order numbers from least to greatest

Ex: $-\frac{1}{5}, 6, -0.25, \sqrt{3}$ $-0.25, -\frac{1}{5}, \sqrt{3}, 6$

- Be able to find absolute value and opposites of numbers

Ex: Evaluate: $-x + |x|$ if $x = -0.75$

$$0.75 + 0.75 = 1.5$$

2.2: Add Real Numbers:

- Be able to add numbers with same signs and different signs

Ex: $-1.7 + (-5.4) + (-x)$ when $x = 2.4$

Ex: $|x| + \left(-3\frac{1}{4}\right) + \left(7\frac{3}{10}\right)$ $x = -3\frac{1}{3}$

-9.5

$$3\frac{1}{3} + \left(-3\frac{1}{4}\right) + \left(7\frac{3}{10}\right)$$

$$3\frac{4}{12} + \left(-3\frac{3}{12}\right) + \left(7\frac{3}{10}\right)$$

$$\frac{5}{60} + \left(7\frac{18}{60}\right) = 7\frac{23}{60}$$

2.3 Subtract Real Numbers:

- Be able to rewrite subtraction as addition and follow addition rules

Ex: $-11.2 - 21.7$

Ex: $-18 - (-9)$

Ex: $12.1 - (y - x)$ $x = 2.5$ $y = -3.4$

$$-11.2 + (-21.7) = -32.9$$

$$-18 + 9 = -9$$

$$12.1 - (-3.4 - 2.5)$$

$$12.1 - (-5.9)$$

$$12.1 + 5.9 = 18$$

2.4 Multiply/Divide Real Numbers

- Be able to multiply and divide numbers with same signs and different signs

Ex: $-6r(-2r)(-4)$

$12r^2(-4) = -48r^2$

Ex: $13 \div \left(-4\frac{1}{3}\right)$

$13 \div \left(-\frac{13}{3}\right)$

$13 \cdot \left(-\frac{3}{13}\right) = -3$

Ex: $-\frac{1}{5}(-10)(4)(-5c)$

$2(4)(-5c) = -40c$

Ex: $\frac{4x}{3y+x}$ $x = 6$ and $y = -8$

$\frac{4 \cdot 6}{3(-8)+6}$

$\frac{24}{-18} = -1\frac{1}{3}$

2.5: Apply the Distributive Property

- Be able to use the distributive property and identify and combine like terms

Ex: $(p-3)(-8)$

$-8p + 24$

Ex: $3(m+5)-10$

$3m + 5$

Ex: $6r + 2(r+4)$

$8r + 8$

- Be able to simplify division problems using the distributive property

Ex: $\frac{6x-14}{2}$

$3x - 7$

Ex: $\frac{-24a-10}{-8}$

$3a + 1.25$

Ex: $\frac{9z-6}{-3}$

$-3z + 2$

2.7: Find Square Roots and Compare Real Numbers

- Be able to evaluate square roots, estimate square roots and order square roots

Ex: $x^2 = 49$

$x = 7$

$x = -7$

Ex: Estimate $-\sqrt{72}$ between 2 integers

Between -8 and -9