Name _____ Class _____ Date _____

Reteaching 1-1

Properties of Real Numbers

OBJECTIVE: Finding additive and multiplicative inverses

MATERIALS: None

The ***additive inverse*** of a number a is $-a$. The number $-a$ is also called the ***opposite*** of a. The sum of a number and its opposite, $a + (-a)$, is always 0.

The ***multiplicative inverse*** of a nonzero number a is $\frac{1}{a}$. The number $\frac{1}{a}$ is also called the reciprocal of a. The product of a nonzero number and its reciprocal, $a \cdot \frac{1}{a}$, is always 1. The number 0 does not have a multiplicative inverse.

Examples

Find the opposite and reciprocal of each number.

a. -7.4 **b.** $3\frac{1}{2}$

a. Opposite: $-(-7.4) = 7.4$

Reciprocal: $\frac{1}{-7.4} = \frac{10}{-74} = -\frac{10}{74} = -\frac{5}{37}$

b. Opposite: $-\left(3\frac{1}{2}\right) = -3\frac{1}{2}$

Reciprocal: $\frac{1}{3\frac{1}{2}} = \frac{1}{\frac{7}{2}} = \frac{2}{7}$

Exercises

Find the opposite and reciprocal of each number.

1. 3 **2.** -2 **3.** $-\frac{1}{6}$ **4.** $\frac{3}{5}$

5. -2.4 **6.** 0.6 **7.** $-5\frac{2}{3}$ **8.** $2\frac{1}{4}$

9. $\frac{\pi}{2}$ **10.** $-\frac{1}{\pi}$ **11.** -0.25 **12.** 1.3

13. $1\frac{2}{5}$ **14.** $-\sqrt{2}$ **15.** $\pi + 2$ **16.** $-\frac{9}{10}$