



**Proving Closure Practice**

4. Is the set  $\{-1, 0, 1\}$  closed under multiplication? Prove or disprove it.

5. Is the set  $\{-1, 0, 1\}$  closed under division? Prove or disprove it.

6. Is the set of fractions with a numerator of 1 (ex.  $\{\dots, -\frac{1}{3}, -\frac{1}{2}, \frac{1}{2}, \frac{1}{3}, \dots\}$ ) closed under multiplication? Is it closed under division? Prove or disprove it.

**Proving Closure Practice**

7. Is the set of rational numbers closed under addition? Prove or disprove it.

8. If  $\odot$  is a made up operation so that  $a \odot b = a^2 - b^2$ , is the set of negative integers closed under the operation  $\odot$ ? Prove or disprove it.

9. Is the set of even integers closed under addition? Prove or disprove it.

**Proving Closure Practice**

10. Is the set of odd integers closed under the following operations? Prove or disprove it for each operation.

a. Addition

b. Subtraction

c. Multiplication

d. Division