

$U = \text{Dogs}$

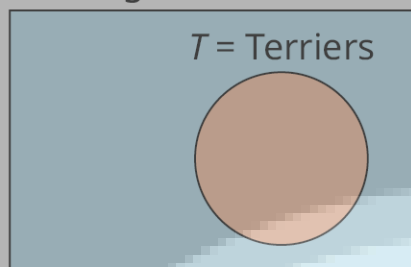


Figure 1.8

[Show/Hide Solution]

Solution

The set of terriers is a subset of the universal set of dogs. In other words, the Venn diagram depicts the relationship that all terriers are dogs. This is expressed symbolically as $T \subset U$.

1- Answer the following questions:

Use set builder notation to write the set of all even integers.

Write the set of all letters in the word Mississippi and label it with a capital M .

Determine whether the following collection describes a well-defined set: "A group of these five types of apples: Granny Smith, Red Delicious, McIntosh, Fuji, and Jazz."

Determine whether the following collection describes a well-defined set: "A group of five large dogs."

Determine the cardinality of the set $A = \{\text{Alabama, Alaska, Arkansas, Arizona}\}$.

FORMULA

If a number, a , raised to a power, n , is then multiplied by a raised to another power, m , the result is $a^n a^m = a^{n+m}$.

EXAMPLE 3.107

Using the Product Rule for Exponents

If possible, use the product rule to simplify the following:

1. $21^9 \times 21^{15}$

2. $5^9 \times 8^4$

