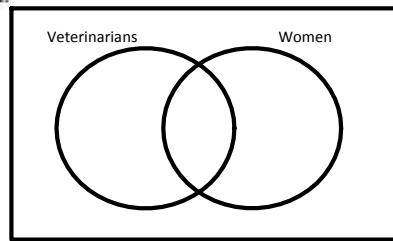


Name: SOLUTION

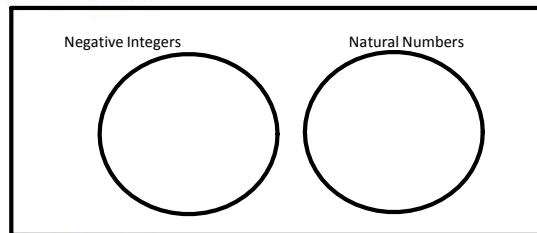
Show Your Work!

1. Draw Venn diagrams with two circles showing the relationship between the following pairs of sets.

(a) (2 pts) Veterinarians and women.



(b) (2 pts) Negative integers and natural numbers.



(c) (2 pts) Rational numbers and real numbers.



2. (2 pts) What does the word *per* mean?

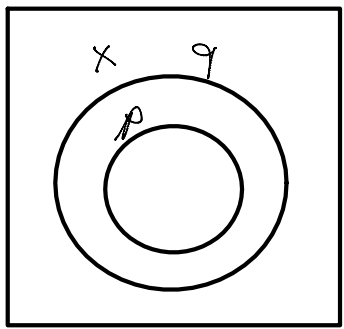
- (a.) Divided by.
- (b.) Multiplied by.
- (c.) In addition to.

3. (4 pts) $\overbrace{\quad}^p$ $\overbrace{\quad}^q$
 Premise: If a figure is a triangle, then it has three sides.
 Premise: Squares have four sides.
 Conclusion: Squares are not triangles.
 x

Circle all of the following words that describe the above argument.

- Inductive
- Deductive
- Strong
- Weak
- Sound
- Unsound
- Valid
- Invalid

← Premises are true & the argument is valid!



⇒ Valid!

4. Convert

(b.) (2 pts) 60 miles per hour to kilometers per hour. (1 mi = 1.61 km.)

$$\frac{60 \cancel{\text{mi}}}{1 \cancel{\text{hr}}} \cdot \frac{1.61 \text{ km}}{1 \cancel{\text{mi}}} = 96.6 \frac{\text{km}}{\text{hr}}$$

(c.) (2 pts) 18 meters per second to miles per hour. (1 km = 1,000 m.)

$$\frac{18 \cancel{\text{m}}}{1 \cancel{\text{s}}} \cdot \frac{60 \cancel{\text{s}}}{1 \cancel{\text{min}}} \cdot \frac{60 \cancel{\text{min}}}{1 \cancel{\text{hr}}} \cdot \frac{1 \cancel{\text{km}}}{10^3 \cancel{\text{m}}} \cdot \frac{1 \text{ mi}}{1.61 \cancel{\text{km}}} = 40.25 \frac{\text{mi}}{\text{hr}}$$