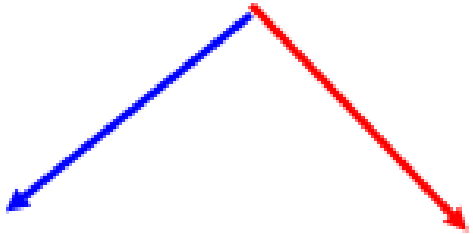
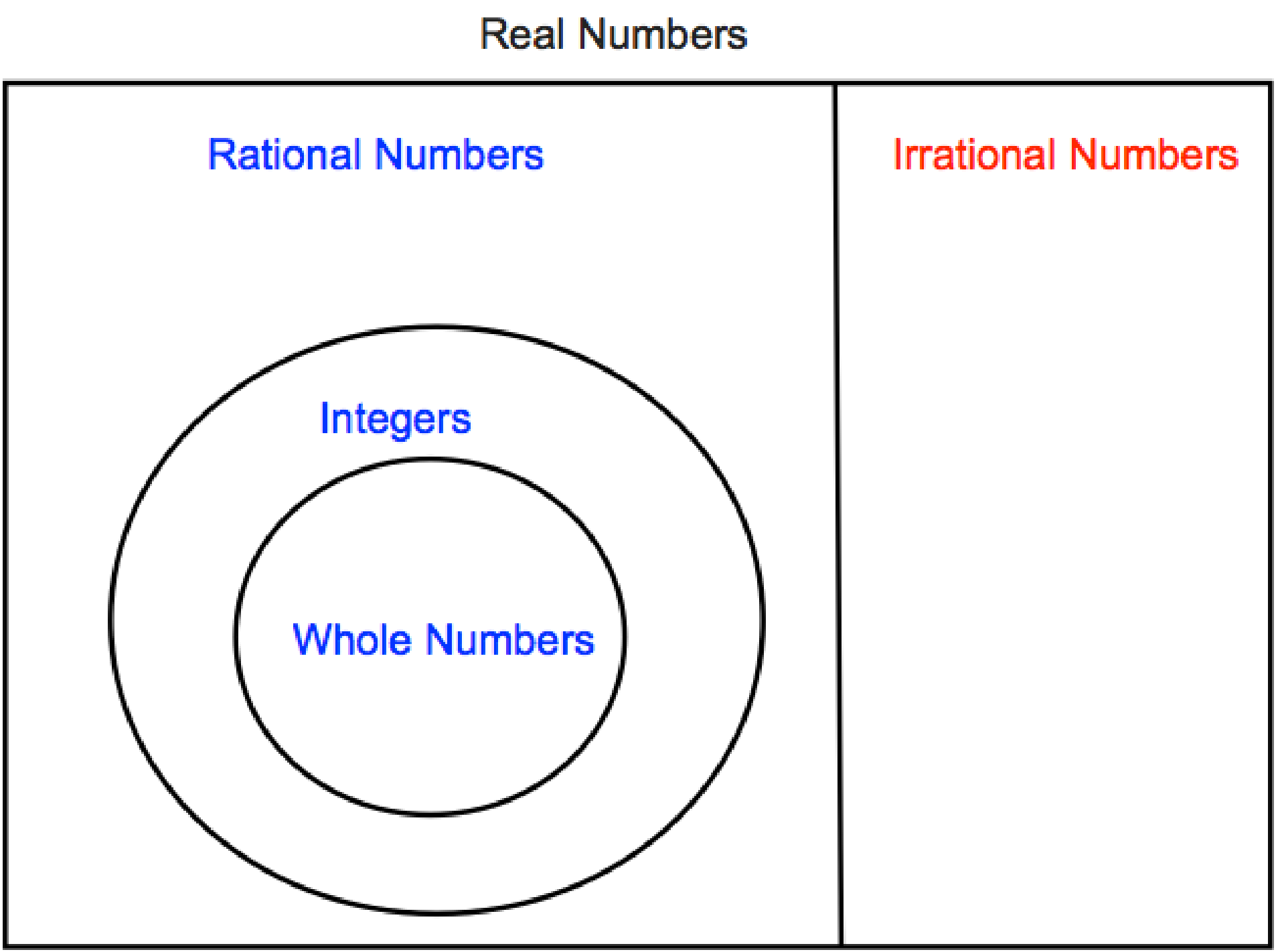
The Real Number System



Rational Numbers
- can be written as a fraction
- decimals repeat or terminate

Irrational Numbers
- can not be written as a fraction
- decimals do not repeat or terminate


Real Numbers
Rational Numbers
Irrational Numbers
Integers
Whole Numbers

Solving Equations with Squares or Cubes

- undo operations in the reverse order of operations
- undo squares by taking the square root and cubes by taking the cube root.

Solve each equation. Round to the nearest tenth if necessary.

1) $\frac{4n^2}{4} = \frac{100}{4}$

$n^2 = 25$

$\sqrt{n^2} = \sqrt{25}$

$n = \pm 5$

2) $\frac{3d^3}{3} = \frac{363}{3}$

$d^3 = 121$

$\sqrt[3]{d^3} = \sqrt[3]{121}$

$d = 4.9$

Solve each equation. Round to the nearest tenth if necessary.

3) $\frac{n^2}{2.5} = 150$

$2.5 \cdot \frac{n^2}{2.5} = 150 \cdot 2.5$

$\sqrt{n^2} = \sqrt{375}$

$n = \pm 19.4$

The formula $h = 16t^2$ describes the time (t) in seconds that it takes for an object to fall from a height (h) in feet. A rollercoaster has a 85-foot freefall drop. How long does it take for the rollercoaster to complete the drop? Round to the nearest tenth.

$$h = 16t^2$$

$$\frac{85}{16} = \frac{16t^2}{16}$$

$$5.3 = t^2$$

$$\sqrt{5.3} = \sqrt{t^2}$$

$$2.3 = t$$

sec