

Algebra II
Auch

Section 2.2
Date:

Objectives

- Apply proportional relationships to rates, similarity, and scale.

Vocabulary:

- ratio -
- proportion -
- rate -
- similar –
- indirect measurement

Cross Products Property

Words	Numbers	Algebra
Addition		

Example 1

Solve each Proportion

a) $\frac{22}{9} = \frac{x}{13.5}$

b) $\frac{512}{16} = \frac{64}{w}$

Try it!

Solve each Proportion

a) $\frac{y}{12} = \frac{77}{84}$

b) $\frac{15}{x} = \frac{2.5}{7}$

Example 2, Solving Percent Problems

A college brochure states that 11.5% of the students attending the college are majoring in engineering. If 2400 students are attending the college, how many are majoring in engineering?

Method 1- Use a proportion

Method 2 – Use a percent equation

$$\frac{\text{percent}}{100} = \frac{\text{part}}{\text{whole}}$$

$$\frac{11.5}{100} = \frac{x}{2400}$$

$$11.5(2400) = 100x$$

$$\frac{27600}{100} = x$$

$$x = 276$$

$$11.5\% = 0.115$$

$$0.115 \cdot 2400 = x$$

$$x = 276$$

Try it!

At Clay High School, 434 students, or 35% of the students play a sport. How many students does Clay High School have?

Example 3, Fitness application

A pedometer measures how far a jogger has run. To set her pedometer, Rita must know her stride length. Rita counts 328 strides as she runs once around a 400 m track. A meter is about 39.37 in. How long is her stride in inches?

Try it!

Luis ran the same 400 m track in 297 strides. Find his stride length in inches.

Example 4, Recreation Applications

A rock climber wants to know the height of a cliff. The climber measures the shadow of her friend, who is 5 feet tall and standing beside the cliff, and measures the shadow of the cliff. If the friend's shadow is 4 feet long and the cliff's shadow is 60 feet long, how tall is the cliff?

Try it!

A 6 foot tall climber casts a 20-foot-long shadow at the same time that a tree casts a 90-foot long shadow. How tall is the tree?