

Lesson 23: Problem Solving Using Rates, Unit Rates, and Conversions

Classwork

- If work is being done at a constant rate by one person, and at a different constant rate by another person, both rates can be converted to their unit rates and then compared directly.
- “Work” can include jobs done in a certain time period, rates of running or swimming, etc.

Example 1: Fresh-Cut Grass

Suppose that on a Saturday morning you can cut 3 lawns in 5 hours, and your friend can cut 5 lawns in 8 hours. Who is cutting lawns at a faster rate?

$$\frac{3 \text{ lawns}}{5 \text{ hours}} = \frac{\underline{\hspace{1cm}} \text{ lawns}}{1 \text{ hour}}$$

$$\frac{5 \text{ lawns}}{8 \text{ hours}} = \frac{\underline{\hspace{1cm}} \text{ lawns}}{1 \text{ hour}}$$

Example 2: Restaurant Advertising

$$\frac{\underline{\hspace{1cm}} \text{ menus}}{\underline{\hspace{1cm}} \text{ hours}} = \frac{\underline{\hspace{1cm}} \text{ menus}}{1 \text{ hour}}$$

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Example 3: Survival of the Fittest

$$\frac{\underline{\quad}}{\underline{\quad}} \frac{\text{feet}}{\text{seconds}} = \frac{\underline{\quad}}{1} \frac{\text{feet}}{\text{second}}$$

$$\frac{\underline{\quad}}{\underline{\quad}} \frac{\text{feet}}{\text{seconds}} = \frac{\underline{\quad}}{1} \frac{\text{feet}}{\text{second}}$$

Example 4: Flying Fingers

$$\underline{\hspace{2cm}} = \underline{\hspace{2cm}}$$

$$\underline{\hspace{2cm}} = \underline{\hspace{2cm}}$$