

**PROBLEM-OF-THE-DAY: ALGEBRA 1****WEEK:** November 5 to November 9**DAY:** Tuesday

**RISD Objective:** Given a problem which reflects proportional reasoning, students will write a proportion which models the situation and solve it.

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**PROBLEM #54**

**“A candle that burns at both ends burns twice as fast” is a common saying. Suppose a candle burns at a rate of  $\frac{5}{8}$  inch per hour if lit on one end and twice as fast if lit on both ends. If the candle is lit at both ends, how many hours and minutes (rounded to the nearest minute) will it take for the candle to burn 12 inches of its length?**

**MODEL SOLUTION #54**

**First, we must determine the rate that the candle is burning at two ends:**

$$\left(\frac{5}{8}\right)(2) = \frac{5}{4}$$

**To solve this problem, first we will set up a proportion:**

$$\frac{\text{inches}}{\text{hours}} = \frac{\text{inches}}{\text{hours}}$$

$$\frac{\frac{5}{4} \text{ in}}{1 \text{ hr}} = \frac{12 \text{ in}}{x \text{ hr}}$$

$$x = \frac{12}{\left(\frac{5}{4}\right)} = 9.6 \text{ hours}$$

**To convert .6 hours to minutes we do this:**

$$0.6 \text{ hours} \left( \frac{60 \text{ minutes}}{1 \text{ hour}} \right) = 36 \text{ minutes}$$

**The total time it would take to burn 12 inches of the candle at both ends is 9 hours and 36 minutes.**