

# FEBRUARY 3, 2015

## STARTER

A burglar had just robbed a bank and was running away with all the money he stole. Suddenly, a guard appeared and refused to let the burglar pass. The burglar had to give up a half of the money he had, as well as an extra \$2000, so he could escape. Not too long afterwards, he was stopped again by a second guard, who demanded half of the money the burglar had left, plus a \$2000 bonus, in exchange for letting the burglar pass. The burglar gave the guard the amount of money asked and continued running toward his home, until he was stopped again by a third guard. The burglar was so desperate to escape that he was forced to give the third guard half of the money he had left and another \$2000. Finally the burglar made it to his house and began to count the money that he still had. He had managed to make off with \$9000 dollars and he was a free man, but when he calculated the difference between the amount of money he had originally stolen and the amount of money he actually took home, he was overcome with sadness. How much money did the burglar originally steal?



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## 2/3 Comparing Rates with Different Units

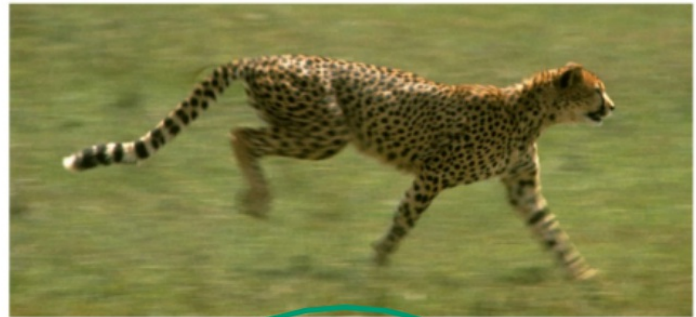
Which do you think is

**FASTER** ?

an antelope

or

a cheetah



$$\begin{aligned} & 1 \text{ } \textcircled{60 \text{ mph}} \\ & \frac{60 \text{ mi}}{\text{hr}} \cdot \frac{5280 \text{ ft}}{1 \text{ mi}} \cdot \frac{1 \text{ hr}}{3600 \text{ sec}} \\ & = \frac{5280 \text{ ft}}{60 \text{ sec}} \\ & = \textcircled{88 \text{ ft/sec}} \end{aligned}$$

$$\begin{aligned} & \textcircled{103 \text{ ft/sec}} \\ & \frac{103 \text{ ft}}{\text{sec}} \cdot \frac{1 \text{ mi}}{5280 \text{ ft}} \cdot \frac{3600 \text{ sec}}{1 \text{ hr}} \\ & = \frac{103 \cdot 3600 \text{ mi}}{5280 \text{ hr}} \\ & = \textcircled{70.23 \text{ mph}} \end{aligned}$$

Which do you think is

**FASTER** ?

a giant tortoise

or

a 3-toed sloth



0.2 ft/sec



0.2 mph

$$\frac{0.2 \cancel{\text{ft}}}{\cancel{\text{sec}}} \cdot \frac{1 \text{ mi}}{5280 \cancel{\text{ft}}} \cdot \frac{3600 \cancel{\text{sec}}}{1 \text{ hr}} = \frac{720 \text{ mi}}{5280 \text{ hr}} = 0.14 \text{ mph}$$

0.29 ft/sec

$$0.2 \times 3600 = 720$$

$$720 \div 5280 = 0.136364$$

Which do you think is

**FASTER** ?

an elephant



➤ 36.6 ft/sec

or

a giraffe



31.1 mph

$$\begin{aligned} &= \frac{31.1 \text{ mi}}{1 \text{ hr}} \cdot \frac{5280 \text{ ft}}{1 \text{ mi}} \cdot \frac{1 \text{ hr}}{3600 \text{ sec}} \\ &= \frac{164208 \text{ ft}}{3600 \text{ sec}} = 45.61 \text{ ft/sec} \end{aligned}$$

$$31.1 \times 5280 = 164208$$

$$164208 \div 3600 = 45.613333$$

Which do you think is

**FASTER** ?

a chicken



13.2 ft/sec

or

a squirrel



12 mph

→  $\frac{12 \text{ mi}}{\text{hr}} \cdot \frac{5280 \text{ ft}}{1 \text{ mi}} \cdot \frac{1 \text{ hr}}{3600 \text{ sec}}$

$= \frac{5280 \text{ ft}}{300 \text{ sec}} = 17.6 \text{ ft/sec}$

$5280 \div 300 = 17.6$

**HOMEWORK**

Blue WST

**DE**

Wednesday