

FEBRUARY 3, 2015

STARTER

Distribute and write the answer with the terms in the correct order.

$$1. \quad 3(4x - 6)$$
$$= 12x - 18$$

$$2. \quad -4(-2n + 5)$$
$$= 8n - 20$$

$$3. \quad 5(-3 + 2a)$$
$$= -15 + 10a$$
$$= 10a - 15$$

$$4. \quad -2(4 - 5k)$$
$$= 10k - 8$$



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2/3 Comparing Rates with Different Units

Which do you think is

FASTER ?

an antelope

or

a cheetah



$$\begin{aligned}
 & 60 \text{ mph} \\
 & \frac{60 \cancel{\text{mi}}}{\cancel{\text{hr}}} \cdot \frac{5280 \cancel{\text{ft}}}{1 \cancel{\text{mi}}} \cdot \frac{1 \cancel{\text{hr}}}{3600 \cancel{\text{sec}}} \\
 & = \frac{316800 \text{ ft}}{3600 \text{ sec}} = 88 \text{ ft/sec}
 \end{aligned}$$

$$\begin{aligned}
 & 103 \text{ ft/sec} \\
 & \frac{103 \cancel{\text{ft}}}{\cancel{\text{sec}}} \cdot \frac{1 \cancel{\text{mi}}}{5280 \cancel{\text{ft}}} \cdot \frac{3600 \cancel{\text{sec}}}{1 \cancel{\text{hr}}} \\
 & = \frac{370800 \text{ mi}}{5280 \text{ hr}} = 70.23 \text{ mph}
 \end{aligned}$$

$$60 \times 5280 = 316800$$

$$316800 \div 3600 = 88$$

$$103 \times 3600 = 370800$$

$$370800 \div 5280 = 70.227273$$

Which do you think is

FASTER ?

a giant tortoise

or

a 3-toed sloth



0.2 ft/sec

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

$$0.2 \times 3600 = 720$$

$$720 \div 5280 = 0.136364$$



0.2 mph

$$\frac{0.2 \text{ mi}}{\text{hr}} \cdot \frac{1 \text{ hr}}{3600 \text{ sec}} \cdot \frac{5280 \cancel{\text{ft}}}{1 \text{ mi}}$$
$$= \frac{1056 \cancel{\text{ft}}}{3600 \text{ sec}} = 0.29 \cancel{\text{ ft/sec}}$$

$$0.2 \times 5280 = 1056$$

$$1056 \div 3600 = 0.2933$$

Which do you think is

FASTER ?

an elephant



36.6 ft/sec

$$\frac{36.6 \cancel{\text{ft}}}{\cancel{\text{sec}}} \cdot \frac{3600 \cancel{\text{sec}}}{1 \text{ hr}} \cdot \frac{1 \text{ mi}}{5280 \cancel{\text{ft}}}$$
$$= \frac{131760 \text{ mi}}{5280 \text{ hr}} = 24.95 \text{ mi/hr}$$

$$36.6 \times 3600 = 131760$$

$$131760 \div 5280 = 24.954545$$

or

a giraffe



31.1 mph

Which do you think is

FASTER ?

a chicken



13.2 ft/sec

or

a squirrel



12 mph

$$\frac{12 \text{ mi}}{\text{hr}} \cdot \frac{5280 \text{ ft}}{1 \text{ mi}} \cdot \frac{1 \text{ hr}}{3600 \text{ sec}} = \frac{63360 \text{ ft}}{3600 \text{ sec}} = 17.6 \text{ ft/sec}$$

$$12 \times 5280 = 63360$$

$$63360 \div 3600 = 17.6$$

HOMEWORK

DE