

AC 5-4 | P 204 (#33)

Method - convert all to meters/hour

10/16

$$\frac{500 \text{ m}}{1 \text{ hr.}}$$

$$\frac{7 \text{ yd}}{1 \text{ min}} \cdot \frac{60 \text{ min}}{1 \text{ hr}} \cdot \frac{.914 \text{ m}}{1 \text{ yd}}$$

$\left[\frac{\text{m}}{\text{h}} \right]$

$$7(60)(.914) = \boxed{383.88 \text{ m/hr.}}$$

5M

$$\frac{6 \text{ in}}{1 \text{ sec}} \cdot \frac{3600 \text{ sec}}{1 \text{ hr}} \cdot \frac{1 \text{ ft}}{12 \text{ in}} \cdot \frac{.305 \text{ m}}{1 \text{ ft}}$$

$\frac{\text{m}}{\text{hr.}}$

$$\frac{(6)(3600)(.305)}{12} = \frac{6588}{12}$$

in \rightarrow ft \rightarrow m
1 ft = 0.305m

19

$$= \boxed{549 \text{ m/hr.}}$$

Method 2 - convert all to yards/min.

Middle $\frac{500 \text{ m}}{1 \text{ hr.}} \cdot \frac{1 \text{ hr}}{60 \text{ min}} \cdot \frac{1 \text{ ft}}{.305 \text{ m}} \cdot \frac{1 \text{ yd}}{3 \text{ ft}}$ $\left[\frac{\text{yds}}{\text{min}} \right]$

$$\frac{500}{60(.305)(3)} = \frac{500}{54.9} = 9.1074 \dots \approx \boxed{9.1 \text{ yd/min}}$$

SM. $\boxed{\frac{7 \text{ yd}}{1 \text{ min}}}$

$$\frac{6 \text{ in}}{1 \text{ sec}} \cdot \frac{1 \text{ yd}}{36 \text{ in}} \cdot \frac{60 \text{ sec}}{1 \text{ min}}$$

$$\left[\frac{\text{yds}}{\text{min}} \right]$$

19. $\frac{6(60)}{36} = \frac{360}{36} = \boxed{10 \text{ yds/min}}$

Method 3 change all to inches/second

$$\frac{500 \text{ m}}{1 \text{ hr}} \cdot \frac{1 \text{ hr}}{3600 \text{ sec}} \cdot \frac{100 \text{ cm}}{1 \text{ m}} \cdot \frac{.394 \text{ in}}{1 \text{ cm}}$$

$\left[\frac{\text{in}}{\text{sec}} \right]$

$$\frac{500(100)(.394)}{3600} = \frac{19700}{3600}$$

$$= 5.47222$$

$$\approx \boxed{5.5 \text{ in/sec}}$$

Middle

$$\text{m} \rightarrow \text{cm} \rightarrow \text{in}$$

$$1 \text{ cm} = .394 \text{ in}$$

SM

$$\frac{7 \text{ yd}}{1 \text{ min}} \cdot \frac{1 \text{ min}}{60 \text{ sec}} \cdot \frac{36 \text{ in}}{1 \text{ yd}}$$

$\left[\frac{\text{in}}{\text{sec}} \right]$

$$\frac{7(36)}{60} = \frac{252}{60} = \boxed{4.2 \text{ in/sec}}$$

lg

$$\boxed{\frac{6 \text{ in}}{1 \text{ sec}}}$$

Method 4 Change all to ft/hour

$$\begin{aligned} \text{Med } \frac{500 \mu\text{m}}{1 \text{ hr}} \cdot \frac{3.279 \text{ ft}}{1 \mu\text{m}} &= (500)(3.279) \\ &= \boxed{1639.5 \text{ ft/hr}} \end{aligned}$$

$\left\{ \frac{\text{ft}}{\text{hr}} \right\}$

$$\begin{aligned} \text{SM } \frac{7 \text{ yd}}{1 \text{ min}} \cdot \frac{3 \text{ ft}}{1 \text{ yd}} \cdot \frac{60 \text{ min}}{1 \text{ hr}} &= (7)(3)(60) \\ &= \boxed{1260 \text{ ft/hr}} \end{aligned}$$

$\left\{ \frac{\text{ft}}{\text{hr}} \right\}$

$$\begin{aligned} \text{1g } \frac{6 \text{ in.}}{1 \text{ sec}} \cdot \frac{1 \text{ ft}}{12 \text{ in.}} \cdot \frac{3600 \text{ sec}}{1 \text{ hr}} &= \frac{6(3600)}{12} \\ &= \frac{21600}{12} \\ &= \boxed{1800 \text{ ft/hr}} \end{aligned}$$

$\left\{ \frac{\text{ft}}{\text{hr}} \right\}$