

§10.9 # 2-7 all 11, 14

HW due 2/26

(Minor errors corrected by Mr. Hansen.)

$$\begin{aligned} ② \quad C &= \pi d \\ C &= 56\pi \\ d &= 56 \end{aligned}$$

$$\boxed{r = 28}$$

$$\begin{aligned} b) \quad 314 &= \pi d \\ C &\approx \frac{314}{3.14} \end{aligned}$$

$$\boxed{r \approx 50}$$

← approx. 49.97 to nearest hundredth

$$\begin{aligned} c) \quad 17\pi &= C \\ d &= 17 \end{aligned}$$

$$\boxed{r = 8.5}$$

$$d) \quad 88 = C = 2\pi r$$

$$\frac{88}{2\pi} = r \Rightarrow r \approx \frac{88}{6.28} \approx \boxed{14.01}$$

$$③ \quad \frac{72}{360} \pi d$$

$$\frac{72}{360} \pi (20)$$

$$\frac{1440}{360} \pi = \boxed{4\pi}$$

$$b) \quad \frac{90}{360} \pi (20)$$

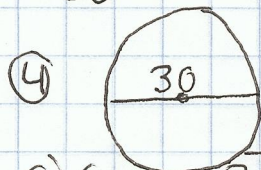
$$\frac{1800}{360} \pi = \boxed{5\pi}$$

$$c) \quad \frac{60}{360} \pi (20) = \frac{20\pi}{6} = \boxed{\frac{10\pi}{3}}$$

~~$$\frac{6000}{360} \pi (\approx \boxed{3.33\pi})$$~~

$$d) \quad \frac{120}{360} \pi (20)$$

$$\frac{18}{36} \pi = \boxed{10\pi}$$

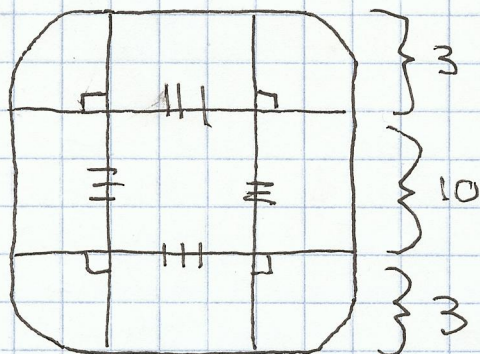


$$a) \quad C = \pi 30 \text{ cm} \approx 94.2 \text{ cm for 1 rev.}$$

$$b) \quad C = 300\pi \text{ cm} \approx 942.5 \text{ cm for 10 revs.}$$

$$c) \quad C = 30,000\pi \text{ cm} \approx 94,257.8 \text{ cm (almost 1 km) for 100 revs.}$$

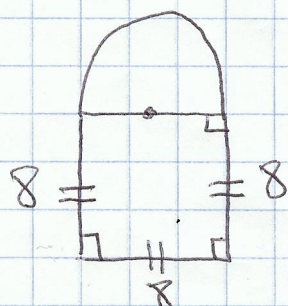
(5) a)



$$10 + 10 + 10 + 10 + 6\pi$$

$$P = 40 + 6\pi$$

b)

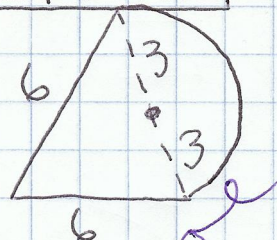


$$8 + 8 + 8 + 8 + \frac{\pi d}{2} \quad (\text{where } d=8 \text{ by inspection})$$

$$\cancel{32 + \pi} = P$$

$$= 24 + 4\pi$$

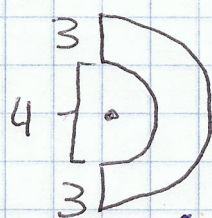
c)



$$6 + 6 + 6 + \frac{\pi d}{2} \quad (\text{where } d=6 \text{ by inspection})$$

$$P = 12 + 3\pi$$

d)

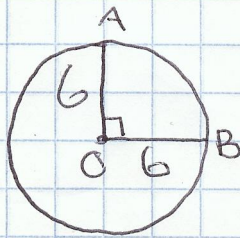


$$3 + 3 + 4 + 2\pi + 5\pi$$

$$P = 6 + 7\pi$$

(Curved parts are
a semicircle of radius 2
and a semicircle of radius 5.)

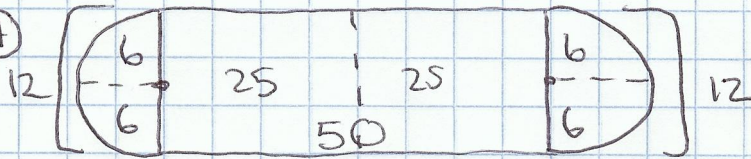
⑥



$$\begin{aligned} a) \frac{90}{360} \pi 12 \\ = \frac{1}{4} \pi 12 \\ = \boxed{3\pi} \end{aligned}$$

$$\begin{aligned} b) P &= 6 + 6 + 3\pi \\ P &= \boxed{12 + 3\pi} \end{aligned}$$

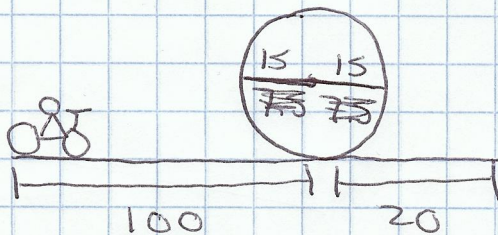
⑦



$$\begin{aligned} \cancel{6 \cdot 6 + 50} \\ \approx \boxed{138 \text{ m}} \end{aligned}$$

$$\begin{aligned} 50 + 50 + [\text{whole circle of radius 6}] \\ = 50 + 50 + 12\pi \end{aligned}$$

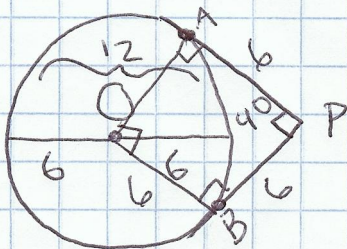
⑪



$$\begin{aligned} 100 + [\text{circle of radius 15}] + 20 \\ = 100 + 30\pi + 20 \end{aligned}$$

$$\begin{aligned} \approx 214 \text{ m} \\ \boxed{120 + 30\pi} \text{ meters} \end{aligned}$$

⑭



$$\frac{270}{360} 6\pi 12\pi + 6 + 6$$

$$\frac{27}{36} 6\pi 12\pi + 6 + 6$$

$$\boxed{9\pi + 12} = \text{belt length}$$