Geo: 351: 1-10

1. $\overset{\frown}{CD} = 80°$, $r = 3''$

$$L = \frac{80°}{360°} \cdot 2\pi r(3)$$

$$L = \frac{2 \cdot 8\pi 3}{3 \cdot 9}$$

$$\boxed{L = \frac{4\pi}{3} \text{ in.}}$$

2. $\overset{\frown}{EF} = 120°$, $r = 12$ m

$$L = \frac{120°}{360°} \cdot 2 \cdot 12 \cdot \pi$$

$$\boxed{L = 8\pi \text{ m}}$$

3. $\overset{\frown}{BIG} = 210°$

$$L = \frac{210}{360} \cdot 2 \cdot 12 \cdot \pi$$

$$\frac{7}{12} \cdot 2 \cdot 12\pi$$

$$\boxed{L = 14\pi \text{ cm}}$$

4. Length $\overset{\frown}{AB} = 6\pi$ m, $\overset{\frown}{AB} = 120°$

$$6\pi = \left(\frac{120°}{360°}\right) \cdot 2\pi r$$

$$\frac{1}{2\pi} \cdot \frac{3}{1} \cdot 6\pi = \frac{1}{3} \cdot 2\pi r \cdot \frac{3}{1} \cdot \frac{1}{2\pi}$$

$$\frac{3 \cdot 6\pi}{2\pi} = r \qquad \boxed{r = 9 \text{ m}}$$

5. $r = 18$ ft
$\angle A = 30$

$\overset{\frown}{RT} = 60°$

$L = \frac{60}{360} \cdot 2\pi(18)$

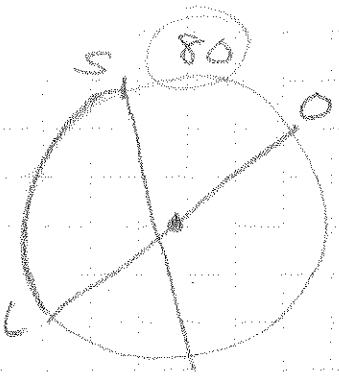
$L = \boxed{6\pi \text{ ft}}$

6. $r = 9$m

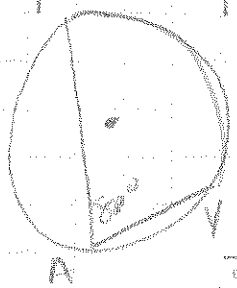
$\overset{\frown}{SO} = 80°$

$L = \frac{80}{360} \cdot 2\pi 9$

$L = \frac{2}{9} \cdot 2\pi 9$ $\boxed{L = 4\pi \text{m}}$



7. $\overset{\frown}{TV} = 12\pi$ in
$d =$?
$\overset{\frown}{TV} = 160°$

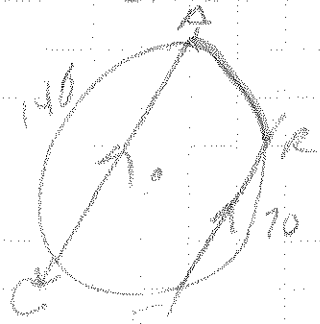


$12\pi = \frac{160}{360} \cdot d\pi$

$\frac{9}{4} \cdot 12 = \frac{4}{9} d \cdot \frac{9}{4}$

$\boxed{d = 27 \text{in}}$

8. $\overset{\frown}{AR} = 40\pi$ cm
$\overline{CA} \parallel \overline{RE}$
$r =$?



$\overset{\frown}{AR} = \overset{\frown}{CE}$

$360 - 216 = 144$

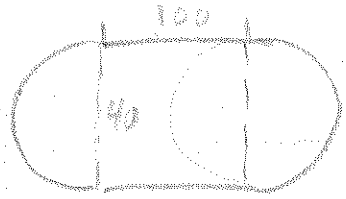
$\overset{\frown}{AR} = 72°$

$\left(\frac{1}{2\pi}\right) 40\pi \text{cm} = \frac{72}{360} \cdot 2\pi r \cdot \frac{1}{2\pi}$

$\frac{360}{36} \cdot \frac{20}{1} = \frac{72}{360} r \cdot \frac{360}{72}$

$\boxed{r = 100 \text{m}}$

9.



$L = 100 + 100 + \frac{1}{2}C + \frac{1}{2}C$

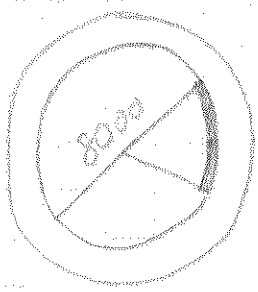
$= 200 + C \qquad C = d\pi = 40\pi$

$= 200 + 40\pi \approx \underline{325\ m}$

$S = \frac{D}{T}$ $\qquad 4\ laps = 1302.65\ m$

$S = \frac{1302\ m}{6\ min}$ $\qquad \boxed{S = 217\ m/min}$

10.



Total → 90 min

Lunch → 15 min

fraction → $\frac{15}{90}$

$b = \frac{15}{90} \cdot 8000\pi \qquad 1333.3\pi\ miles$

$\approx 4188\ miles$