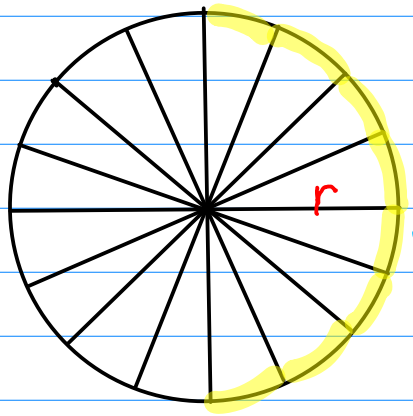
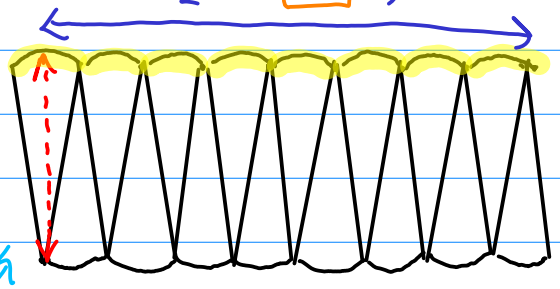
$C = \pi d$

$C = 2\pi r$

§8.5: Area of ⊙'s



EQUAL AREA



$\frac{1}{2}C = \frac{1}{2}(2\pi r) = \pi r$

$C = 2\pi r$

$A_{RECT} = bh$

$= (\pi r)(r)$

$A_{RECT} = \pi r^2$

$\star \boxed{A_{\odot} = \pi r^2}$

Ex: Find (a) the circumference and (b) the area of a ⊙ w/ $r = 3''$.

(a) $C = 2\pi r$

$= 2\pi(3'')$

$= 6\pi''$

↑ EXACT Answer, in terms of π

(b) $A_{\odot} = \pi r^2$

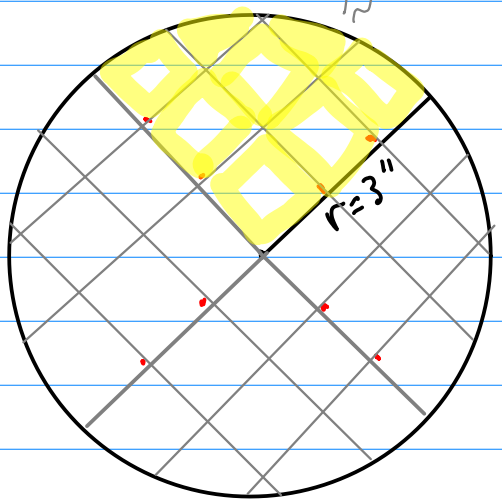
$= \pi \cdot (3\,in)^2$

$= \pi 9\,in^2$

$= \boxed{9\pi\,in^2}$ ✓

$\approx 9(3.14)\,in^2$

$\approx 28.3\,in^2$



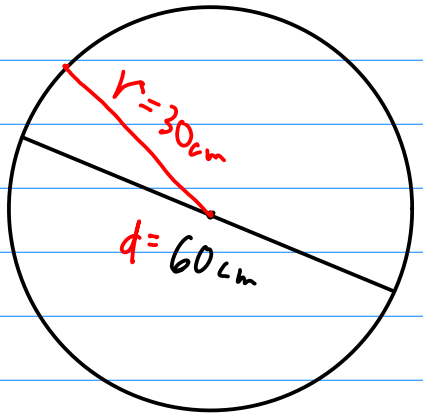
$\approx 7\,in^2$

Estimated Area:

$7\,in^2 \times 4 \approx 28\,in^2$

$\frac{30 \cdot 30}{900}$

Ex:



A = ?

30 cm

$A_\odot = \pi r^2$

$= \pi (30 \cdot cm)^2$

$= \pi \cdot 900 \, cm^2$

$= 900\pi \, cm^2$

Ex: The area of a ⊙ is $16\pi \, ft^2$. Find the radius.

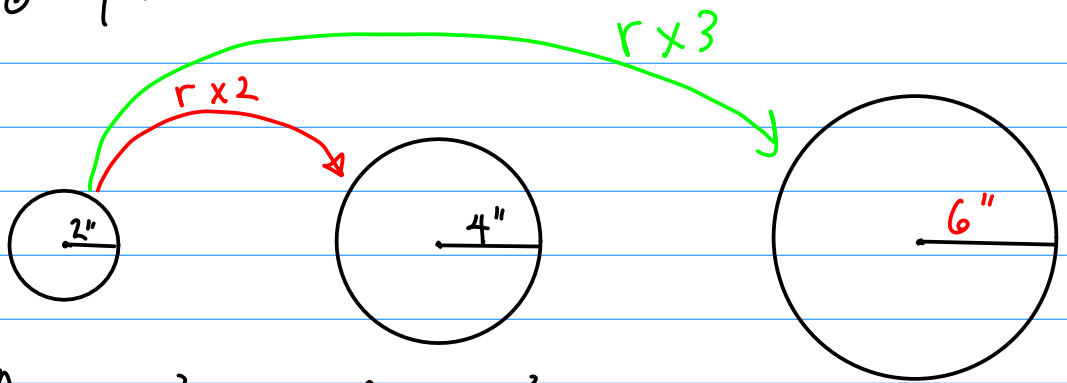
$A_\odot = \pi r^2$

$\frac{16\pi \, ft^2}{\pi} = \frac{\pi r^2}{\pi}$

$\sqrt{16 \cdot ft^2} = \sqrt{r^2}$

$4 \, ft = r$

- $A_\odot$ w/ radius is doubled:



$A_\odot = \pi r^2$

$= \pi (2 \, in)^2$

$= \pi \cdot 4 \, in^2$

$= 4\pi \, in^2$

$A = \pi r^2$

$= \pi (4 \, in)^2$

$= \pi \cdot 16 \, in^2$

$= 16\pi \, in^2$

A = ?

A x 4

A x 9