4-19-17

Aim: SWBAT use the circumference formula to solve for the radius or diameter algebraically.

Do Now: Find the exact area (in terms of π) and circumference of a circle with radius 8 cm.

HW: Finish WS

Do Now: Find the exact area of a circle with radius 8 cm.

in terms of π

$A = \pi r^2$

$A = \pi \cdot 8^2$

$A = 64\pi \text{ cm}^2$

Do Now: Find the exact circumference of a circle with radius 8 cm.

in terms of π; π is in the answer

$C = 2\pi r$

$C = 2 \cdot \pi \cdot 8$

$C = 16\pi$ cm

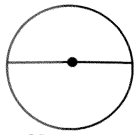
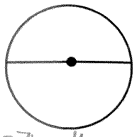
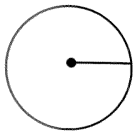
$C = \pi d$

$C = \pi \cdot 16$

$C = 16\pi$ cm

Finding the Area, the Radius, or the Diameter

Find the area of each circle using $A = \pi r^2$. Write your answer four different ways.

	Answer in terms of π.	Answer using the π button.	Answer rounded to the nearest tenth.	Answer using π ≈ 3.14.
1. A circle with diameter 20 inches.  If $d = 20$ in., then $r = 10$ in.	EXACT $A = \pi r^2$ $A = \pi \cdot 10^2$ $A = \pi \cdot 100$ $A = 100\pi$ in.^{2}	$A = 314.1592654...$ in.^{2}	$A \approx 314.2$ in.^{2}	$A \approx 314$ in.^{2}
2. A circle with diameter 7 inches.  If $d = 7$ in., then $r = 3.5$ in.	EXACT $A = \pi r^2$ $A = \pi (3.5)^2$ $A = \pi \cdot 12.25$ $A = 12.25\pi$ in.^{2}	$A = 38.4845100...$ in.^{2}	$A \approx 38.5$ in.^{2}	$A = \pi r^2$ $A \approx (3.14)(3.5^2)$ $A \approx 38.465$ in.^{2}
3. A circle with radius 20 meters. 	EXACT $A = \pi r^2$ $A = \pi \cdot 20^2$ $A = \pi \cdot 400$ $A = 400\pi$ m^2	$A = 1256.637061...$ m^2	$A \approx 1256.6$ m^2	$A \approx 1256$ m^2

Finding the Area, the Radius, or the Diameter

$C = \pi d$ $C = 2\pi r$ $A = \pi r^2$

Use algebra to answer each question.

π in answer

4. Find the radius of a circle whose circumference is 100π. $C = 2\pi r$ $\frac{100\pi}{2\pi} = \frac{2\pi r}{2\pi}$ $50 = r$	5. Find the diameter of a circle whose circumference is 10π. $C = \pi d$ $\frac{10\pi}{\pi} = \frac{\pi d}{\pi}$ $10 = d$	6. Find the exact area of a circle whose circumference is 60π. $C = 2\pi r$ $\frac{60\pi}{2\pi} = \frac{2\pi r}{2\pi}$ $30 = r$ $A = \pi r^2$ $A = \pi \cdot 30^2$ $A = 900\pi$
7. Find the radius of a circle whose circumference is 80π.	8. Find the diameter of a circle whose circumference is 25π.	9. Find the exact area of a circle whose circumference is 200π.

$A=\pi r^2$ $C=2\pi r$ $C=\pi d$

$C=70\pi$, $r=?$

$C=2\pi r$

$\frac{70\pi}{2\pi}=\frac{2\pi r}{2\pi}$

$35=r$

$C=70\pi$, $d=?$

$C=\pi d$

$\frac{70\pi}{\pi}=\frac{\pi d}{\pi}$

$70=d$

$C=70\pi$, $A=?$

$C=2\pi r$

$\frac{70\pi}{2\pi}=\frac{2\pi r}{2\pi}$

$35=r$

$A=\pi r^2$

$A=\pi \cdot 35^2$

$A=1225\pi$