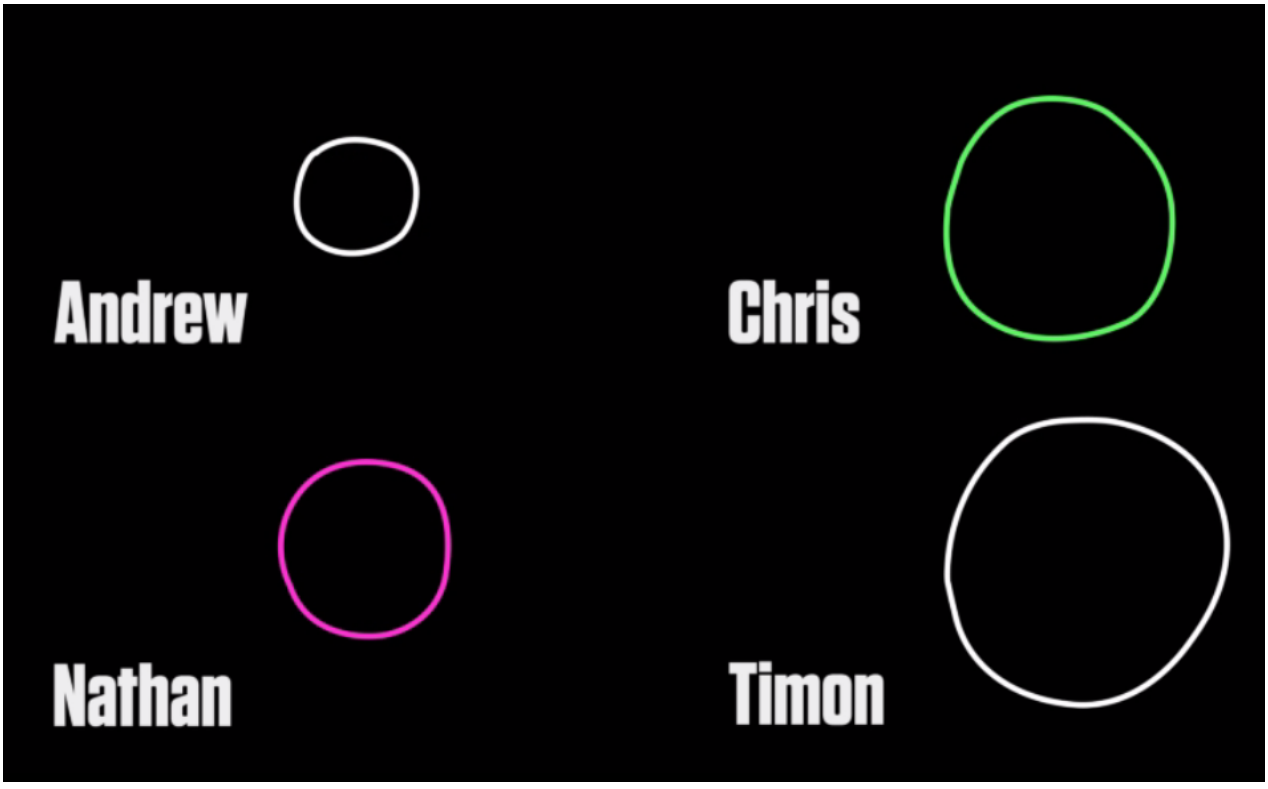
click for movie

Warm-up:

- Watch movie and decide:
  - > Who do you think did the best job drawing a circle?
  - > Rank each person. Write this on your warm-up sheet.
  - > Explain your ranking.
- Turn into table groups and explain to your group why you selected these rankings.



3. What information is important?

4. What information doesn't matter?

5. Come up with a formula that will use the information that matters and then return a number to tell us who did the best and worst job drawing a circle.

6. Test your formula. Does it work for very large and very small cases?

Link to more info

Winner's Circle

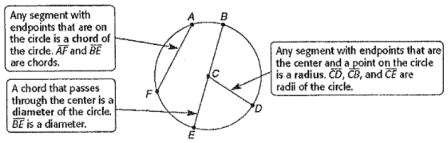
10.1 Circles and Circumference

Objectives:
- Identify and use parts of circles.
- Solve problems involving the circumference of a circle.

circle C
⊙C

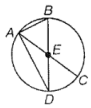
Parts of a Circle:
- **circle:** a collection of coplanar points equidistant from a point, called the center.
- **radius:** any segment from the center to a point on the circle. $\overline{CD}$, $\overline{BC}$, $\overline{EC}$
- **diameter:** any segment with endpoints on a circle that intersects the center. $\overline{BE}$
- **chord:** any segment with endpoints on a circle.

The circle below is called circle C, or ⊙C.



Ex: Name the following:

- **circle:** ⊙E, circle E
- **radius:** radii $\overline{EA}$, $\overline{EC}$, $\overline{EB}$, $\overline{ED}$
- **diameter:** $\overline{AC}$, $\overline{BD}$
- **chord:** $\overline{AB}$, $\overline{AD}$, $\overline{AC}$, $\overline{BD}$

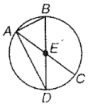


Ex: Find the radius and diameter

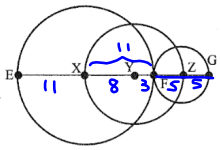
a. If AC = 20, Find AE. 10 radius is half the diameter

b. If DE = 7, Find AC. 14

c. If AE = 3, Find DE. 3 $\sqrt{6}$



Ex: The diameters of ⊙X, ⊙Y, and ⊙Z are 22 mm, 16 mm, and 10 mm, respectively.



a. Find XY 8 mm
b. Find XF 11 mm
c. Find ZG 5 mm
d. Find EZ 27 mm
e. find YF 3 mm
f. find YG 13 mm

Circumference of a Circle: the distance around a circle. If a circle has a circumference of C units and a radius of r units or a diameter of d units, then

$$C = 2\pi r \text{ or } C = \pi d$$

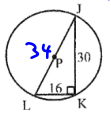
Where did the number we call π come from?

a. Find C if r = 13 inches. $C = 2\pi \cdot 13 = 26\pi$ in

b. Find C if d = 6 millimeters. $C = \pi \cdot 6 = 6\pi$ mm

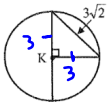
c. Find d and r to the nearest hundredth if C = 65.4 feet. $C = \pi d$, $65.4 = \pi d$, $\frac{65.4}{\pi} = d$, $d = 20.82$ ft, $r = 10.41$ ft

Ex: Find the exact circumference of ⊙P.



$16^2 + 30^2 = d^2$
$1156 = d^2$
$34 = d$
$C = 34\pi$

Ex: Find the exact circumference of ⊙K.



$C = 2\pi \cdot 3$
$C = 6\pi$

Ex:

CRITICAL THINKING In the figure, O is the center of the circle, and $x^2 + y^2 + p^2 + t^2 = 288$. What is the exact circumference of ⊙O?

$$x^2 + y^2 + p^2 + t^2 = 288$$

Hint: Find r^2, then r, then C

$p^2 + t^2 = r^2$
$x^2 + y^2 = r^2$

Practice:

9-1 Practice Worksheet: # 1 - 10

9-1 Reteaching: # 1 - 7

Attachments

act1.mov