

## Schedule for next few days

Today: Circles introduction

Monday: Benchmark 25 min, then retake time in class

Tuesday: Benchmark 50 min, " "

Thursday: Retakes in class

Th 7: A circles lesson

Benchmark is Monday (an A day) and Tuesday

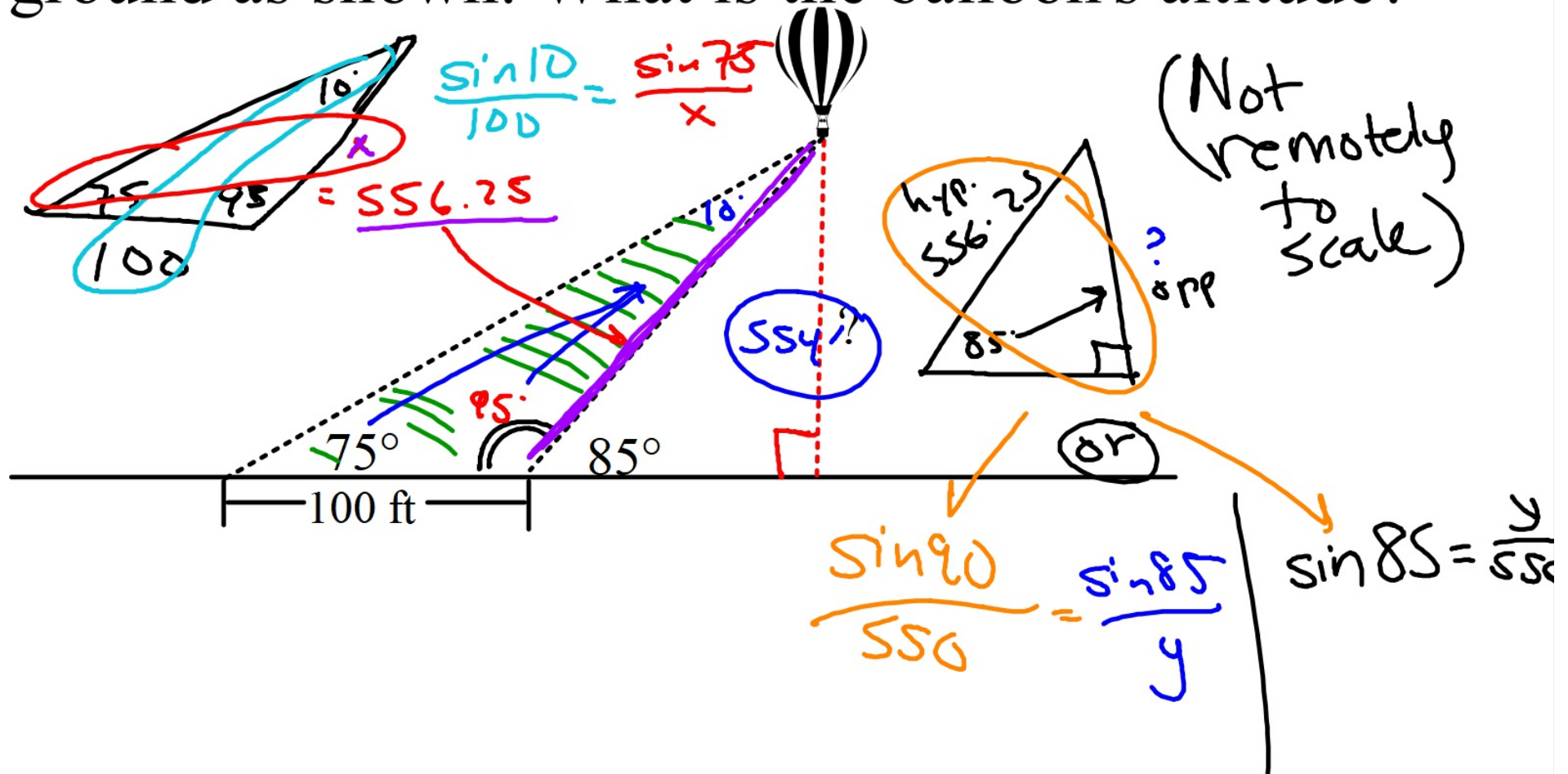
Mon: 25 min, no calculator

Tue: 50 min, calculator ok

Do your best!!

Review:

Two wires 100 ft apart are tethering a balloon to the ground as shown. What is the balloon's altitude?



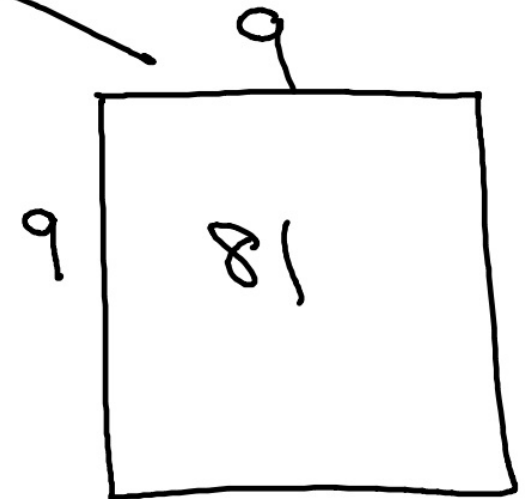
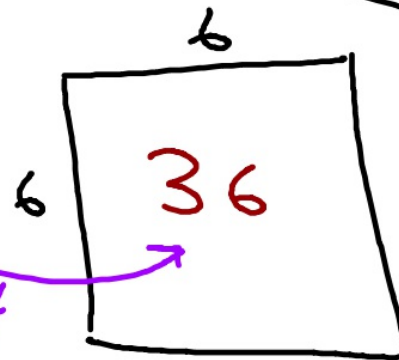
How do area and volume change with dilations?

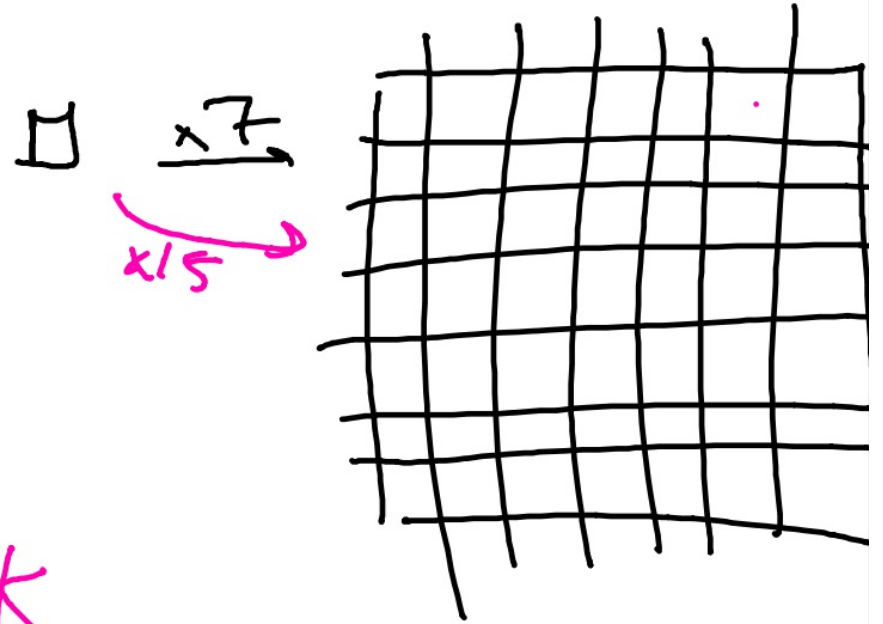
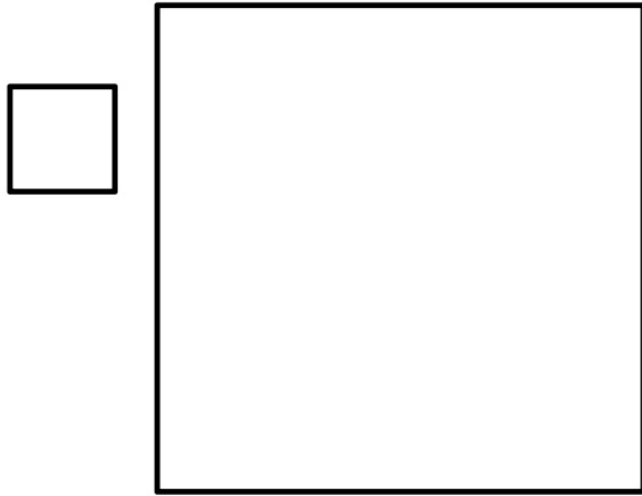
A ~~rectangle~~<sup>blob</sup> has area  $9 \text{ cm}^2$  and is then dilated by a scale factor of 2. What is the area of the new figure?

~~18~~



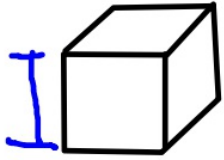
$\times 2 \rightarrow$



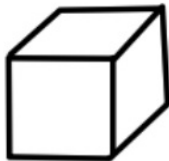
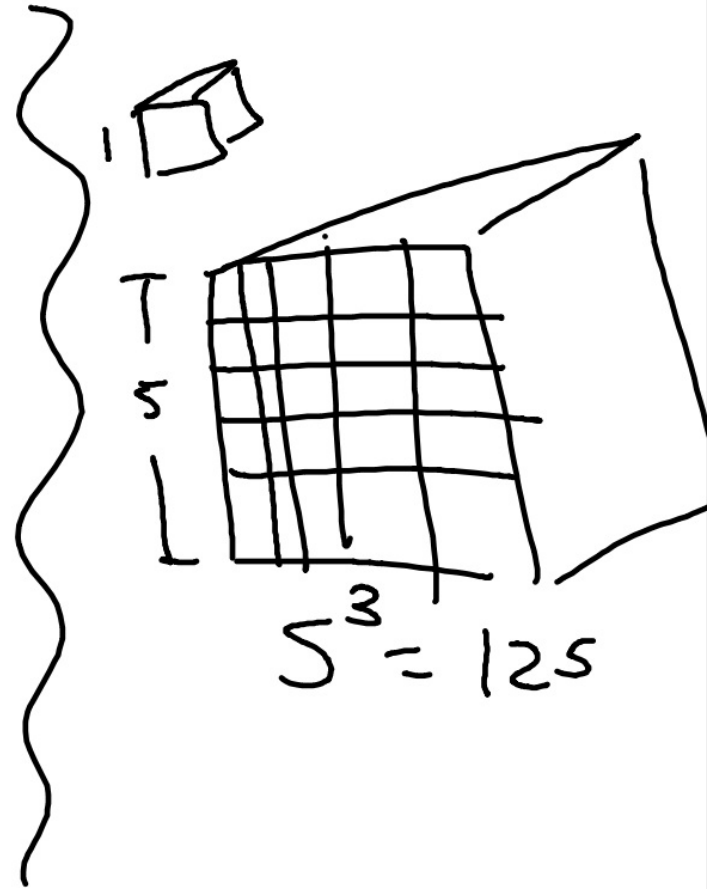
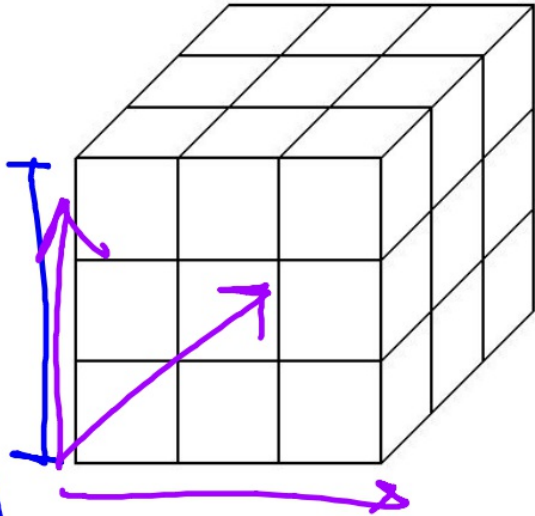


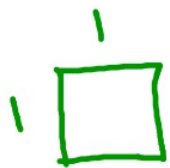
If linear scale is  $K$ ,  
then area scale is  $K^2$ .

Linear Scale: 3  
Volume Scale:  $3^3$

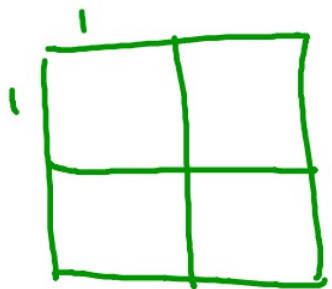


Linear scale:  $k$   
Area scale:  $k^2$   
Volume Scale:  $k^3$





$\xrightarrow{\times 2}$

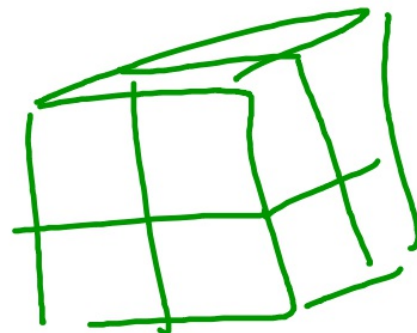


$2^2$

4



$\xrightarrow{\times 2}$



8

$2^3$

8

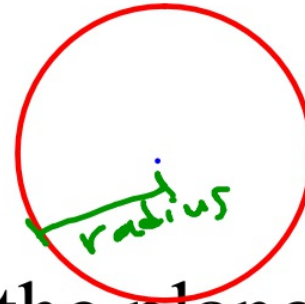
Circles!

Kandinsky





What IS a circle?

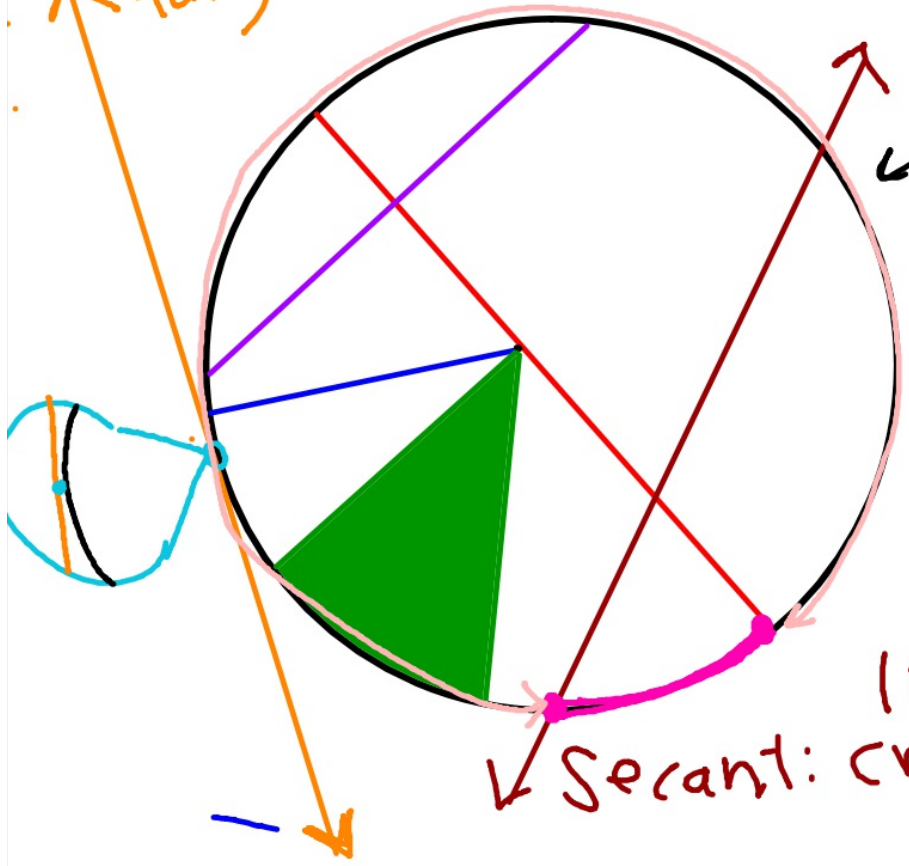


The set of all points in the plane equidistant  
from a center point.



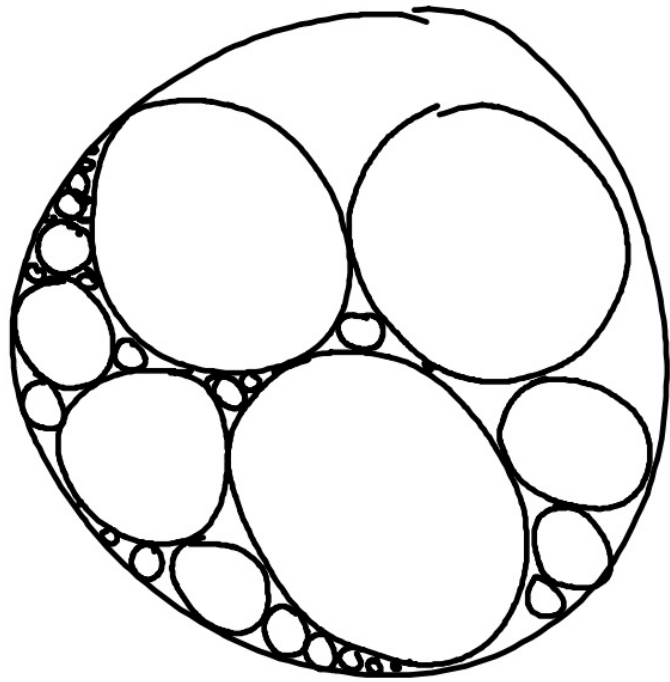
# Circle Terms

tangent: only 1 pt. on circle



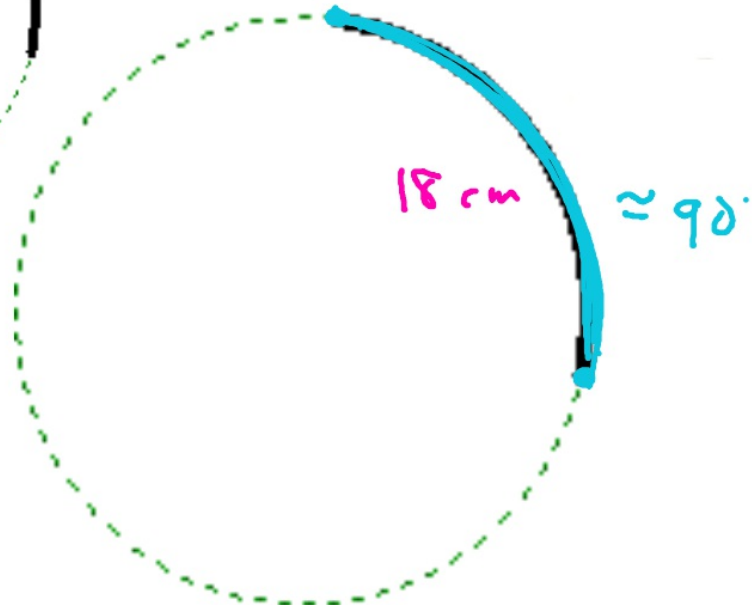
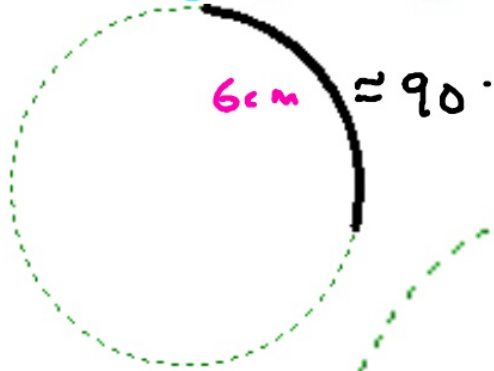
- diameter
- radius
- circumference (length)
- chord connects 2 pts on circle
- tangent
- secant
- sector "slice of circle"
- minor arc
- major arc

line  
Secant: crosses circle twice.



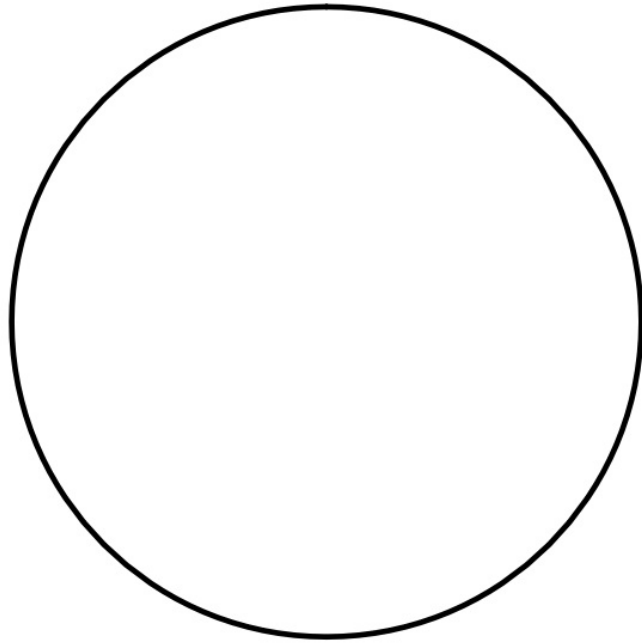
# Arc Measure vs Arc Length

amount of curvature



↳ physical, linear measurement (in, cm, etc.)

## A 'better' way to measure angles



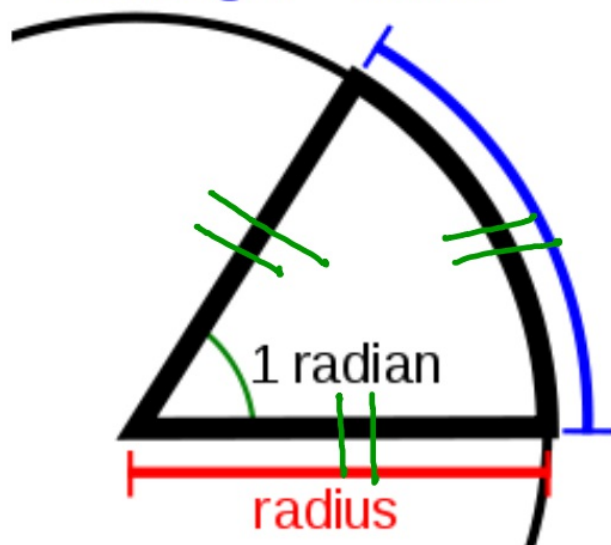
What IS a degree?

$\frac{1}{360^{\text{th}}}$  of a circle

360°

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arc length = radius

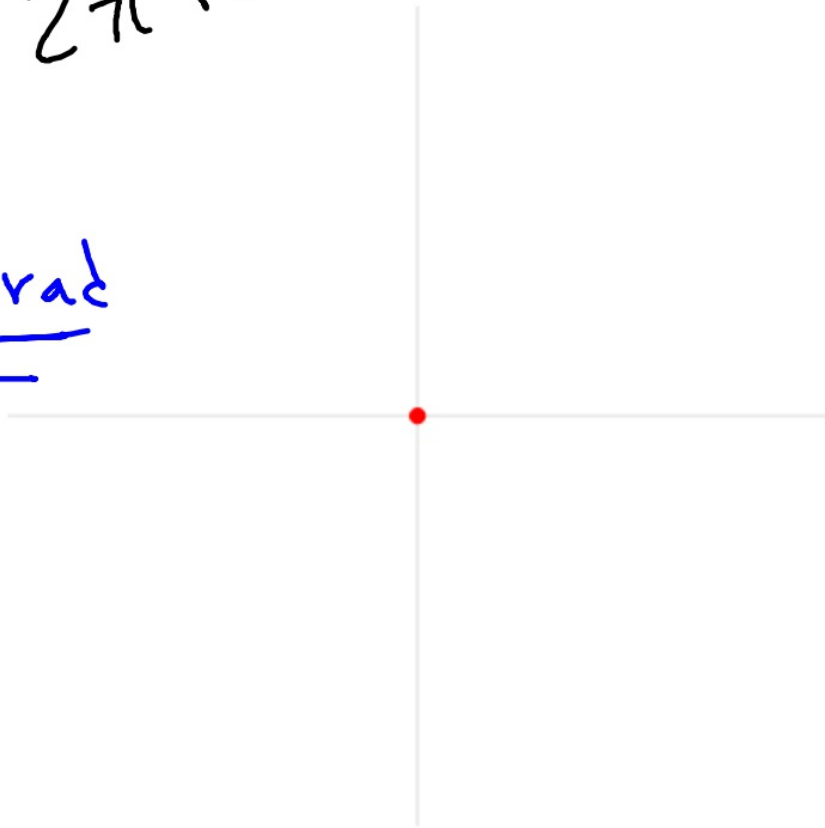


$$1 \text{ rad} \approx 57^\circ$$

$$360^\circ = 2\pi \text{ rad}$$

÷2

$$\underline{\underline{180^\circ = \pi \text{ rad}}}$$



$$\underline{180^\circ = \pi \text{ radians}}$$

Convert  $30^\circ$  to radians.

$$\frac{30^\circ}{x} \neq \frac{180^\circ}{\pi}$$

$$\frac{30\pi}{180} = \frac{180x}{180}$$

$$\boxed{\frac{1}{6}\pi = x}$$

Convert  $5\pi/6$  to degrees.

$$\frac{5\pi/6}{x} \neq \frac{\pi}{180^\circ}$$

$$x \cdot \pi = \frac{5\pi}{6} \cdot 180$$

$$\boxed{\text{H}} \quad x = \frac{5}{6} \cdot 180$$

$5 \cdot \frac{1}{6} \cdot 180 = 30$

$$x = 150^\circ$$



HW

- get old hw done for retakes next week
- study notes for benchmark