

# AP Precalculus - Session 1

## Guided Practice (We Do Together)

Wednesday, January 7, 2026 | Teacher: Lyles

Name: \_\_\_\_\_ Period: \_\_\_\_\_

### SECTION 1: RIGHT TRIANGLE PRACTICE (8 minutes)

Work these problems WITH YOUR CLASS. Show all work in the space provided.

#### ***Problem 1: The 5-12-13 Triangle***

A right triangle has sides: opposite = 5, adjacent = 12, hypotenuse = 13

Find	Your Work	Answer
$\sin(\theta) = ?$		
$\cos(\theta) = ?$		
$\tan(\theta) = ?$		

#### ***Problem 2: Finding Missing Functions***

If  $\sin(\theta) = 3/5$  and  $\cos(\theta) = 4/5$ , find  $\tan(\theta)$ .

Hint:  $\tan(\theta) = \sin(\theta)/\cos(\theta)$  OR opposite/adjacent

Your work:

Answer:  $\tan(\theta) = _____$

## SECTION 2: DEGREE-RADIAN CONVERSIONS (12 minutes)

Remember:  $180^\circ = \pi$  radians

### ***Problem 3: Convert $60^\circ$ to radians***

Formula: radians = degrees  $\times (\pi/180)$

Your work:

Answer: \_\_\_\_\_ radians

### ***Problem 4: Convert $3\pi/4$ radians to degrees***

Formula: degrees = radians  $\times (180/\pi)$

Your work:

Answer: \_\_\_\_\_ degrees

### ***Problems 5-9: Practice in Pairs***

Work with a partner. Take turns showing the work.

Problem	Your Work	Answer
5. Convert $45^\circ$ to radians		
6. Convert $150^\circ$ to radians		
7. Convert $\pi/6$ to degrees		
8. Convert $5\pi/6$ to degrees		
9. Convert $270^\circ$ to radians		

## SECTION 3: ARC LENGTH (5 minutes)

Formula:  $s = r\theta$  (where  $\theta$  is in radians)

### ***Problem 10: Find the arc length***

A circle has radius  $r = 6$  meters and central angle  $\theta = \pi/4$  radians.

Find the arc length  $s$ .

Your work:

Answer:  $s = \underline{\hspace{2cm}}$  meters

### ***Problem 11: Application Problem***

A Ferris wheel has radius 50 feet. You travel through an angle of  $2\pi/3$  radians.

How far did you travel along the circular path?

Your work:

Answer:  $\underline{\hspace{2cm}}$  feet

### ***✓ Check Your Understanding:***

Can you explain to a partner:

- Why do we multiply by  $\pi/180$  to convert degrees to radians?
- What does 1 radian actually represent?
- Why must  $\theta$  be in radians for the formula  $s = r\theta$  to work?