4.1 Angle Basics   Math Analysis   Name:
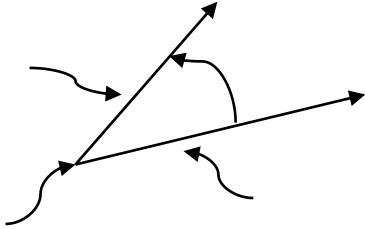Notes/Examples

An angle is formed when a ray is rotated about its endpoint. The first ray is called the _____side
and the second ray is called the _____ side of the angle. The common endpoint between these
two rays is called the _____. LABEL the parts the angle.

An angle is identified by:
1. The direction of its rotation.
    *_____ angles are generated by
        counterclockwise rotations.
    *Negative angles are generated by _____
        Rotations.
2. The amount of the rotation (the size of the angle).

An angle is in _____ position when:
    1. Its vertex is at the _____ of a rectangular coordinate system.
    2. Its initial side lies along the _____ .

When an angle is in standard position and its terminal side lies on the x-axis or y-axis, the angle is called a
_____ angle. Otherwise, the terminal side can lie in any of the 4 quadrants of
the coordinate plane and we say that the angle lies in that quadrant.

ANGLE MEASUREMENT. Angles are measured either in DEGREE S or RADIANS.

A. Degrees   B. Radians
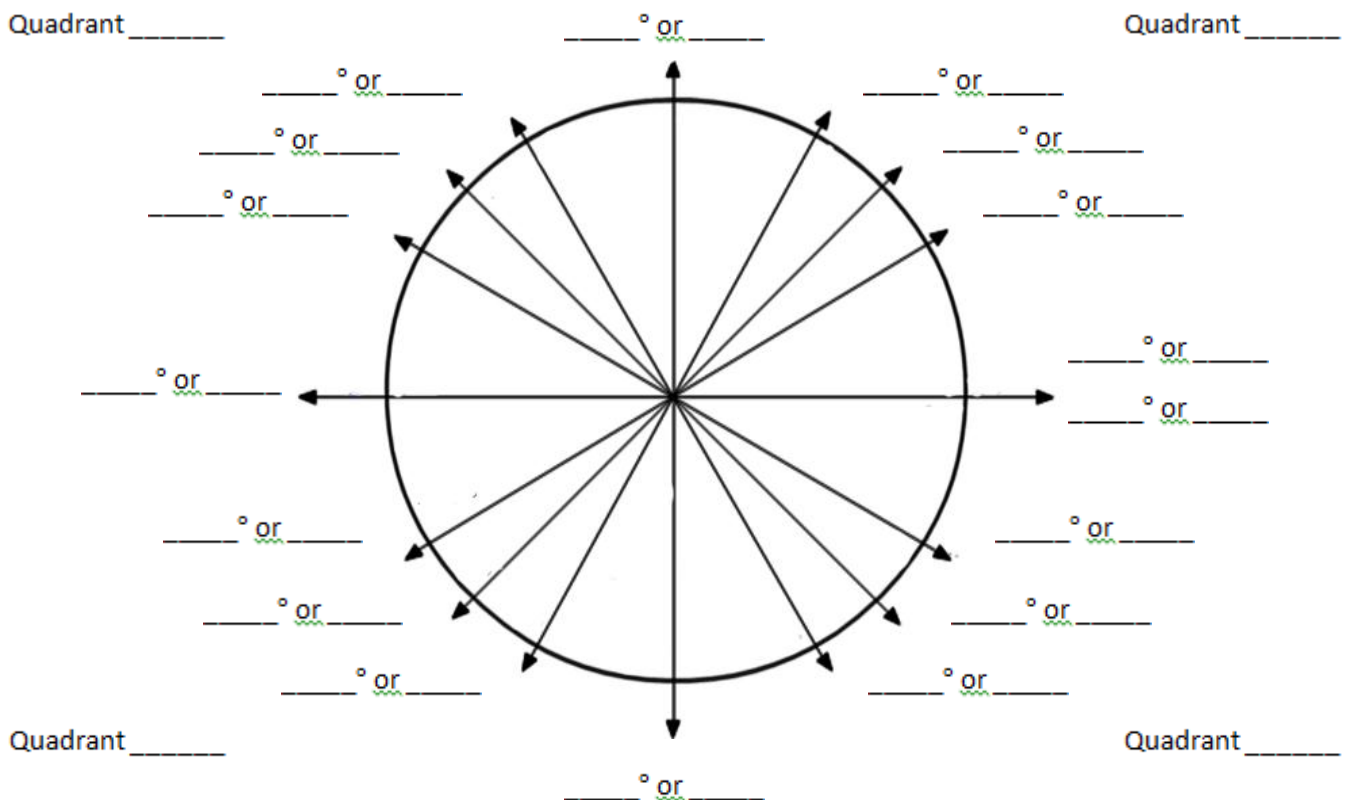   1 revolution = _____degrees   1 revolution =_____ radians
    $\frac{1}{2}$ revolution = _____degrees $\frac{1}{2}$ revolution = _____ radians

**Label the quadrants, the FILL in the UNIT CIRCLE with special angle measurements in DEGREE and RADIAN.

Quadrant_____   _____° or _____   Quadrant_____
        _____° or _____   _____° or _____
    _____° or_____   _____° or_____
    _____° or _____   _____° or_____

    _____° or_____   _____° or_____
                                _____° or_____
                                _____° or_____
    _____° or _____   _____° or_____
    _____° or _____   _____° or_____
        _____° or _____   _____° or_____

Quadrant_____   Quadrant_____
        _____° or_____

CONVERSION.

Degree ⟹ Radian

Radian ⟹ Degree

Degree Measurement $\times \dfrac{\pi}{180°}$

Radian Measurement $\times \dfrac{180°}{\pi}$

Ex. Convert to Radian

1. $120°$

2. $145°$

Ex. Convert to Degree

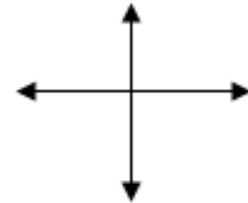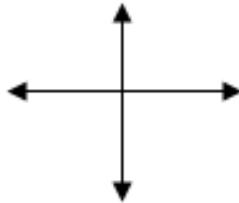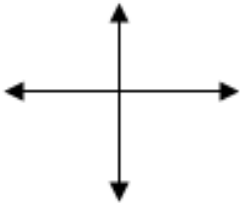1. $\dfrac{11}{12}\pi$

2. 4

Sketch each angle in standard position and state which quadrant the angle lies. (Do not convert to degrees)

1. $-\dfrac{7}{4}\pi$

2. $500°$

3. $\dfrac{16}{3}\pi$

Angles with the same initial side and terminal sides are called _____ angles.
Coterminal angles are obtained by adding or subtracting multiples of 2π or $360°$.

Ex. Find a positive angle less than 2π or $360°$ that is coterminal with the given angle in standard position.

1. $510°$

2. $-\dfrac{4}{7}\pi$

3. $\dfrac{21}{5}\pi$