



Pythagorean Identities

Name _____

Let $P(x,y)$ be a point in quadrant one on the unit circle $x^2 + y^2 = 1$.

Let point O be the origin $(0,0)$.

1. Draw \overline{OP} . Let θ be the angle formed by \overline{OP} and the positive portion of the x -axis.
2. Draw the perpendicular from P to meet the x -axis at point M .
3. State the ratio $\frac{MP}{OP}$ in terms of θ .
4. State the ratio $\frac{OM}{OP}$ in terms of θ .
5. State the coordinates of point P in terms of θ .
6. Substitute your coordinates into the unit circle to verify one of the Pythagorean Identities.

Drawing:

7. Choose P in a different quadrant and repeat the process.

$$\frac{MP}{OP} = \underline{\hspace{2cm}}$$

$$\frac{OM}{OP} = \underline{\hspace{2cm}}$$

Coordinates of point P : _____

Substitute your coordinates into the unit circle:

Drawing:

➡ Does the identity continue to be true? _____