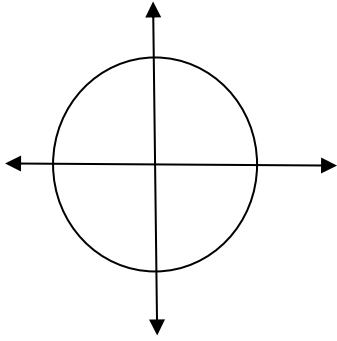


Relationship of Triangles , Coordinate Trig and Trigonometric Graphs

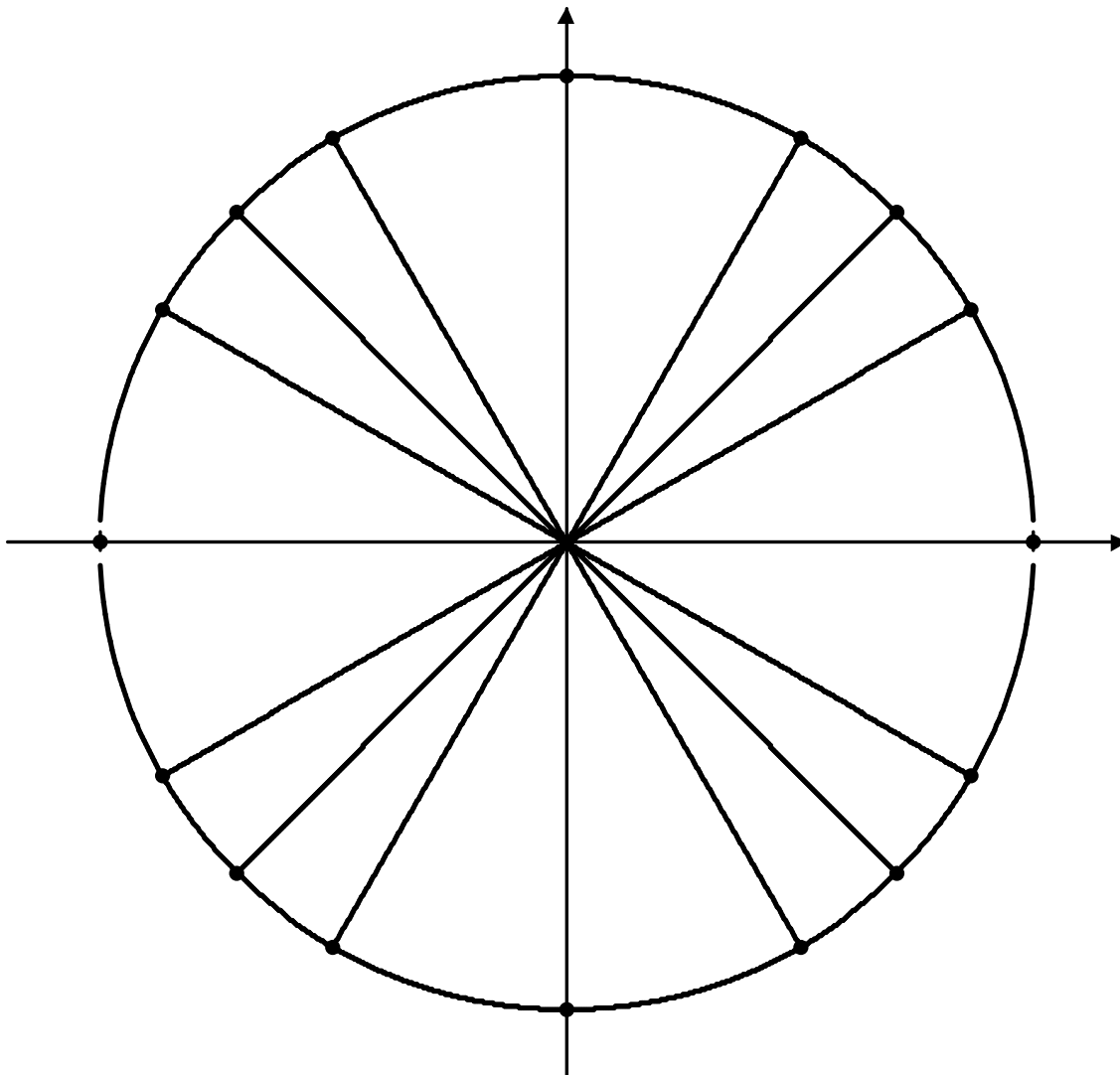
The Unit Circle is the circle centered at $(0, 0)$ with a radius of 1. Let $P(x, y)$ be any point on the unit circle.



So, as P rotates around the unit circle, forming an angle θ in standard position, the coordinates of P are:

$$P(x, y) = (\quad , \quad)$$

Complete the Unit Circle by filling in the missing values for the given angles.



Graphing the Trig Functions $y = \sin \vartheta$ and $y = \cos \vartheta$

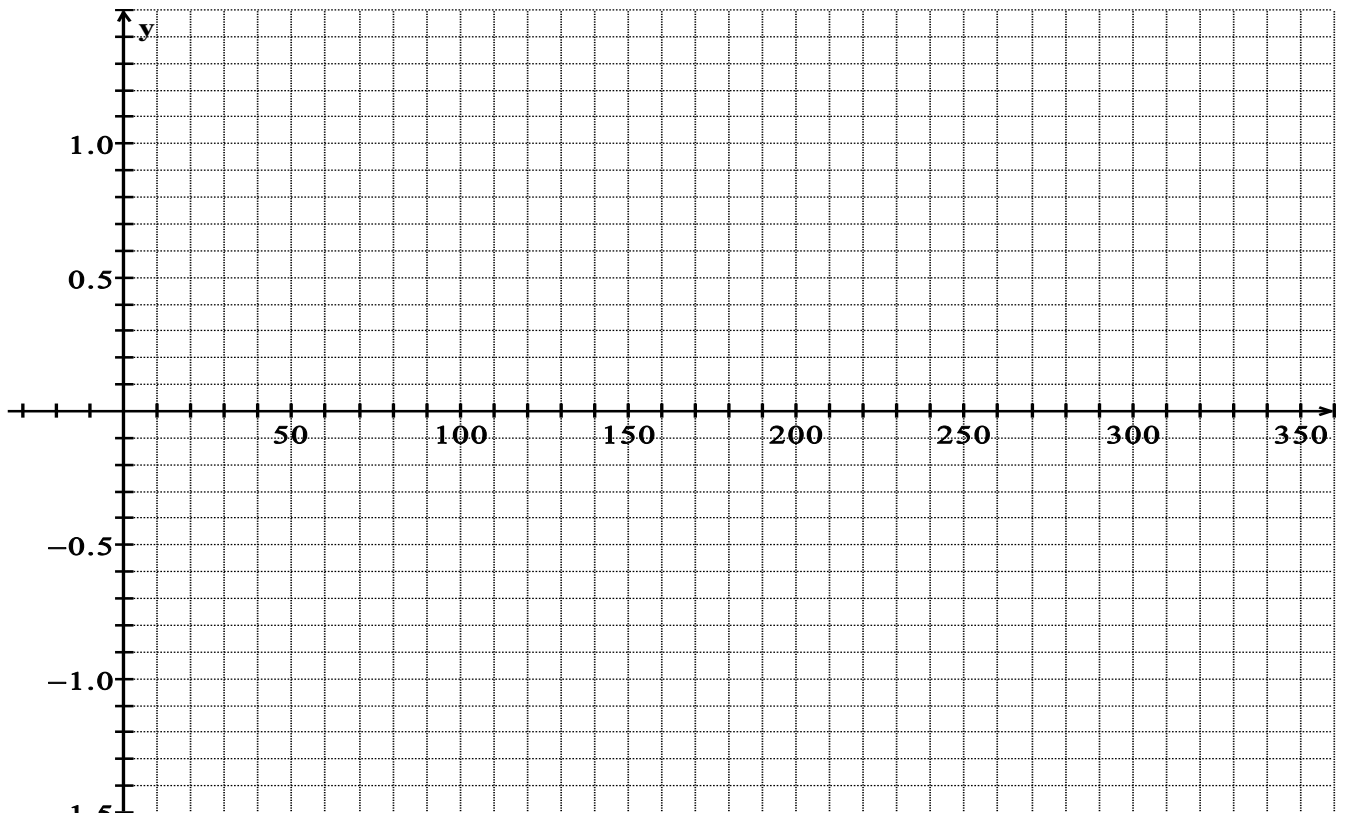
Complete each table using the unit circle and then graph each on the same grid in different colours.

$$y = \sin \vartheta$$

| ϑ | Exact Value | Estimate Value |
|-------------|-------------|----------------|
| 0 | | |
| 30 | | |
| 60 | | |
| 90 | | |
| 120 | | |
| 150 | | |
| 180 | | |
| 210 | | |
| 240 | | |
| 270 | | |
| 300 | | |
| 330 | | |
| 360 | | |

$$y = \cos \vartheta$$

| ϑ | Exact Value | Estimate Value |
|-------------|-------------|----------------|
| 0 | | |
| 30 | | |
| 60 | | |
| 90 | | |
| 120 | | |
| 150 | | |
| 180 | | |
| 210 | | |
| 240 | | |
| 270 | | |
| 300 | | |
| 330 | | |
| 360 | | |



Observations about the Graphs of $y = \sin \theta$ and $y = \cos \theta$

- 1.
- 2.
- 3.

| Properties | $y = \sin \theta$ | $y = \cos \theta$ |
|------------|-------------------|-------------------|
| | | |
| | | |
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These are examples of **sinusoidal functions**.