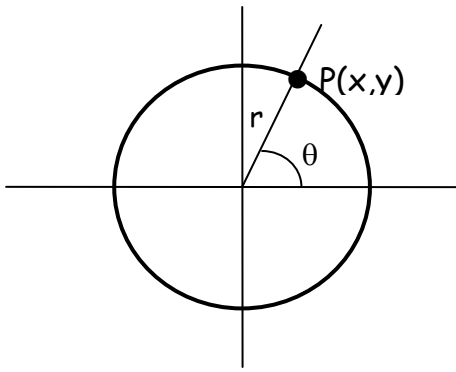


Trigonometric Ratios



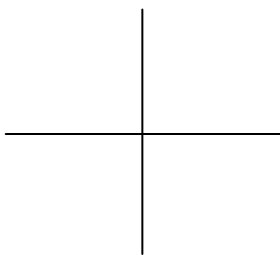
$$x^2 + y^2 = r^2$$

Primary trig ratios

Reciprocal trig ratios

1. $P(-6,3)$ is a point on the terminal arm of an angle θ in standard position where $0 \leq \theta \leq 2\pi$. Determine the exact values of $\sin\theta$, $\cos\theta$ and $\tan\theta$. Include a clearly labelled sketch.

The CAST rule confirms the sign of our answers.



2. θ is a standard position angle in quadrant III such that $\cos\theta = \frac{-2}{3}$. Determine the exact value of $\csc\theta$. Include a clearly labelled sketch.

3. θ is a standard position angle such that $\tan\theta = \frac{-1}{4}$. Determine the exact value of $\sin\theta$. Include a clearly labelled sketch.

4. For each of the following:
- sketch the standard position angle
 - determine the related acute angle
 - determine the exact value of the specified trig ratio

i) $\cos \frac{2\pi^r}{3}$

ii) $\sin \frac{7\pi^r}{4}$

iii) $\tan \left(\frac{-5\pi^r}{6} \right)$

5. Determine the exact value of the following. Include a clearly labeled sketch.

a) $\sin \pi^r$

b) $\sec \left(\frac{3\pi^r}{2} \right)$

6. Evaluate, accurate to four decimal places. Be sure to set your calculator in **radians**.

a) $\sin \frac{\pi^r}{10}$

b) $\cot \left(\frac{2\pi^r}{5} \right)$

c) $\sec 2^r$