

Angle at corner P

= angle between vectors

Q-P and R-P

= angle between $\begin{bmatrix} 4 \\ 0 \end{bmatrix}$ and $\begin{bmatrix} 4 \\ 3 \end{bmatrix}$

$$= \arccos \left(\frac{\begin{bmatrix} 4 \\ 0 \end{bmatrix} \cdot \begin{bmatrix} 4 \\ 3 \end{bmatrix}}{\sqrt{4^2 + 0^2} \sqrt{4^2 + 3^2}} \right) = \arccos \left(\frac{16}{4 \cdot 5} \right)$$
$$= \arccos \left(\frac{4}{5} \right)$$

Angle at corner Q =

angle between P-Q + R-Q.

= angle " $\begin{bmatrix} -4 \\ 0 \end{bmatrix}$ + $\begin{bmatrix} 0 \\ 3 \end{bmatrix}$

$$= \arccos \left(\frac{\begin{bmatrix} -4 \\ 0 \end{bmatrix} \cdot \begin{bmatrix} 0 \\ 3 \end{bmatrix}}{\sqrt{(-4)^2 + 0^2} \sqrt{0^2 + 3^2}} \right) = \arccos(0) = \frac{\pi}{2}$$

Angle at corner R = angle between P-R + Q-R.

= angle between $\begin{bmatrix} -4 \\ -3 \end{bmatrix}$ + $\begin{bmatrix} 0 \\ -3 \end{bmatrix}$

$$= \arccos \left(\frac{\begin{bmatrix} -4 \\ -3 \end{bmatrix} \cdot \begin{bmatrix} 0 \\ -3 \end{bmatrix}}{\sqrt{(-4)^2 + (-3)^2} \sqrt{0^2 + (-3)^2}} \right) = \arccos \left(\frac{9}{5 \times 3} \right)$$