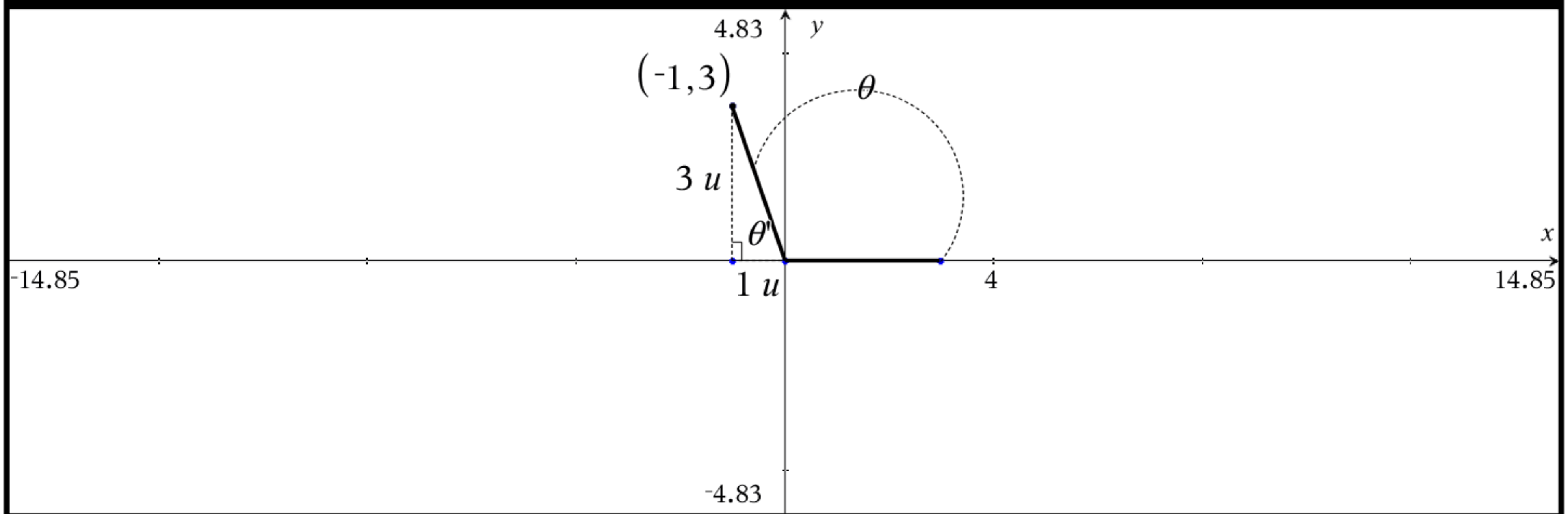
Quadrant 2



x = -1 y = 3 $r^2 = x^2 + y^2 = (-1)^2 + (3)^2 = 1 + 9 = 10$ implies r = √ (10) = $\sqrt{10}$

θ ≈ 108.435 ° ≈ 1.89255 radians θ' = reference angle ≈ 71.5651 ° ≈ 1.24905 radians

$\sin\theta = 3/\sqrt{10} = \frac{3\cdot\sqrt{10}}{10}$ $\cos\theta = -1/\sqrt{10} = \frac{-\sqrt{10}}{10}$ $\tan\theta = 3/-1 = -3$

$\csc\theta = \sqrt{10}/3 = \frac{\sqrt{10}}{3}$ $\sec\theta = \sqrt{10}/-1 = -\sqrt{10}$ $\cot\theta = -1/3 = \frac{-1}{3}$

NEVER calculate the reference angle in any quadrant BUT quadrant 1,

THEN reference into quadrant that the point lies in

$\sin\theta' = 3/\sqrt{10} = \frac{3\cdot\sqrt{10}}{10}$ $\theta' = \sin^{-1}(3/\sqrt{10}) \approx 71.5651°$

Since this point $(^-1, 3)$ is in quadrant 2 $\theta = 180° - \sin^{-1}(3/\sqrt{10}) \approx 108.435°$

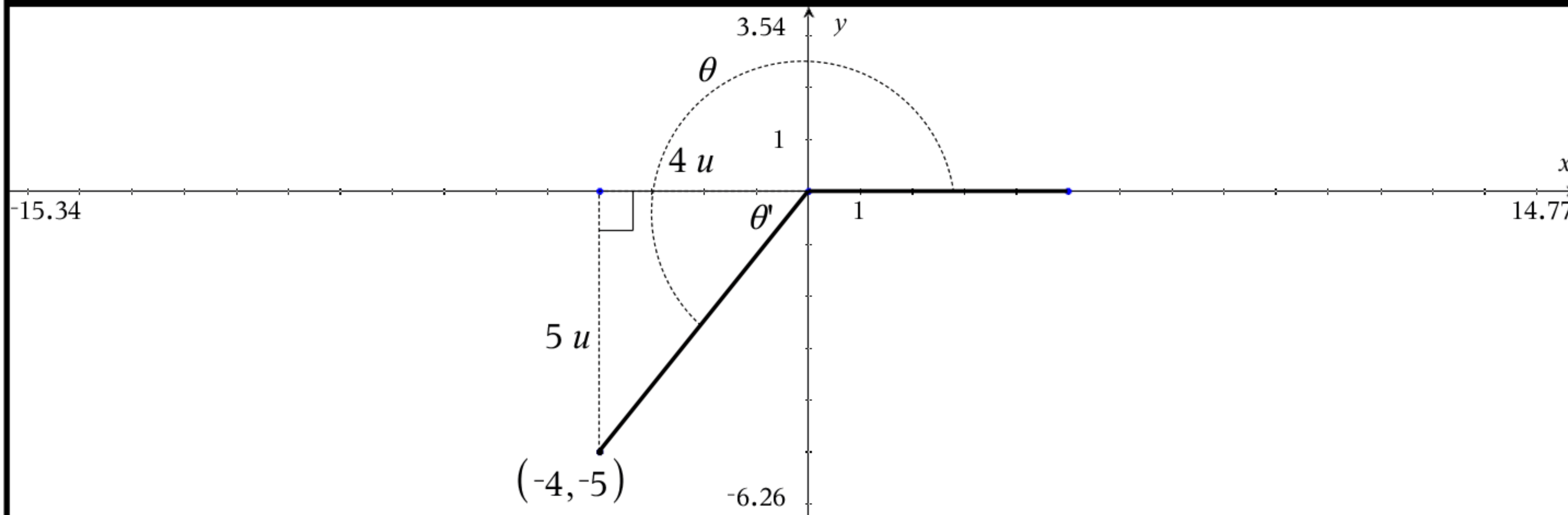
$\cos\theta' = 1/\sqrt{10} = \frac{\sqrt{10}}{10}$ $\theta' = \cos^{-1}(1/\sqrt{10}) \approx 71.5651°$

Since this point $(^-1, 3)$ is in quadrant 2 $\theta = 180° - \cos^{-1}(1/\sqrt{10}) \approx 108.435°$

$\tan\theta' = 3/1 = 3$ $\theta' = \tan^{-1}(3/1) \approx 71.5651°$

Since this point $(^-1, 3)$ is in quadrant 2 $\theta = 180° - \tan^{-1}(3/1) \approx 108.435°$

Quadrant 3



x = $^{-}4$ y= $^{-}5$ $r^2 = x^2 + y^2 = (^{-}4)^2 + (^{-}5)^2 = 16 + 25 = 41$ implies r = √ (41) = $\sqrt{41}$

θ ≈ 231.34 °≈4.03765 radians θ' =reference angle ≈51.3402 °≈0.896055 radians

sin θ = $^{-}5 / \sqrt{41} = \frac{^{-}5 \cdot \sqrt{41}}{41}$ cos θ = $^{-}4 / \sqrt{41} = \frac{^{-}4 \cdot \sqrt{41}}{41}$ tan θ = $^{-}5 / ^{-}4 = \frac{5}{4}$

csc θ = $\sqrt{41} / ^{-}5 = \frac{^{-}\sqrt{41}}{5}$ sec θ = $\sqrt{41} / ^{-}4 = \frac{^{-}\sqrt{41}}{4}$ cot θ = $^{-}4 / ^{-}5 = \frac{4}{5}$

NEVER calculate the reference angle in any quadrant BUT quadrant 1,

THEN reference into quadrant that the point lies in

$\sin\theta' = 5/\sqrt{41} = \frac{5\cdot\sqrt{41}}{41}$ $\theta' = \sin^{-1}(5/\sqrt{41}) \approx 51.3402°$

Since this point $(-4, -5)$ is in quadrant 3 $\theta = 180° + \sin^{-1}(5/\sqrt{41}) \approx 231.34°$

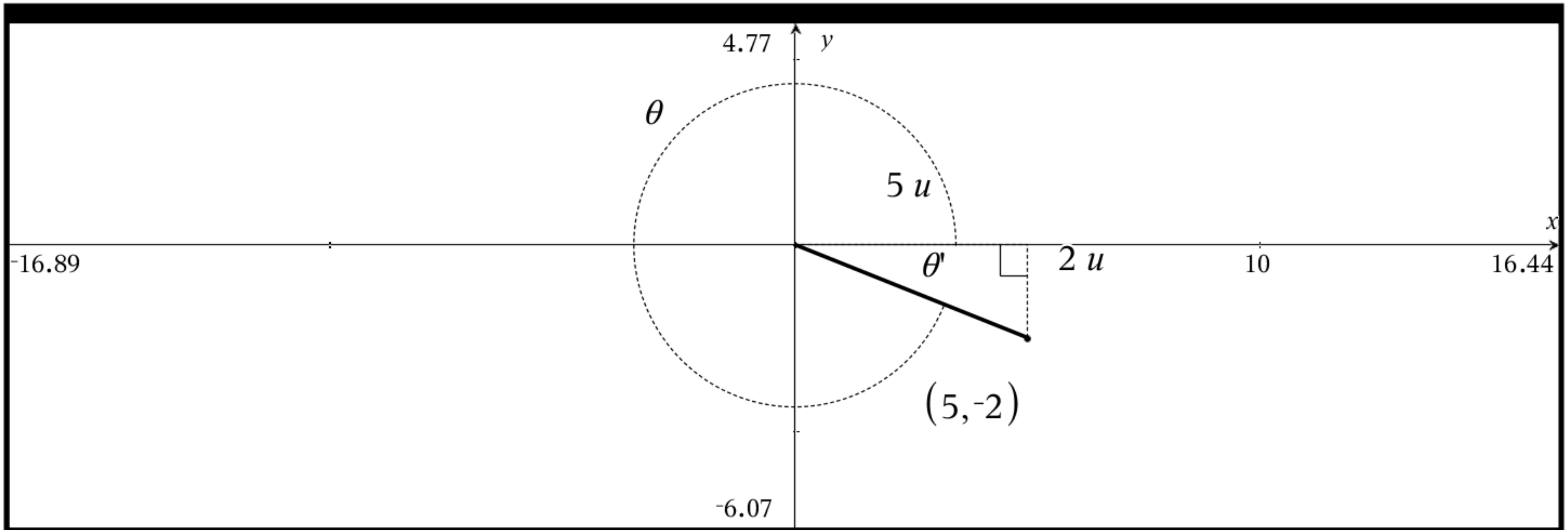
$\cos\theta' = 4/\sqrt{41} = \frac{4\cdot\sqrt{41}}{41}$ $\theta' = \cos^{-1}(4/\sqrt{41}) \approx 51.3402°$

Since this point $(-4, -5)$ is in quadrant 3 $\theta = 180° + \cos^{-1}(4/\sqrt{41}) \approx 231.34°$

$\tan\theta' = 5/4 = \frac{5}{4}$ $\theta' = \tan^{-1}(5/4) \approx 51.3402°$

Since this point $(-4, -5)$ is in quadrant 3 $\theta = 180° + \tan^{-1}(5/4) \approx 231.34°$

Quadrant 4



x $=5$ y$=-2$ $r^2=x^2+y^2=(5)^2+(-2)^2=25+4=29$ implies r = $\sqrt{(29)}=\sqrt{29}$

$\theta \approx 338.199°\approx 5.90268$ radians θ' =reference angle $\approx 21.8014°\approx 0.380506$ radians

$\sin\theta = -2/\sqrt{29}=\dfrac{-2\cdot\sqrt{29}}{29}$ $\cos\theta = 5/\sqrt{29}=\dfrac{5\cdot\sqrt{29}}{29}$ $\tan\theta = -2/5=\dfrac{-2}{5}$

$\csc\theta = \sqrt{29}/-2=\dfrac{-\sqrt{29}}{2}$ $\sec\theta = \sqrt{29}/5=\dfrac{\sqrt{29}}{5}$ $\cot\theta = 5/-2=\dfrac{-5}{2}$

NEVER calculate the reference angle in any quadrant BUT quadrant 1,
THEN reference into quadrant that the point lies in

$\sin \theta' = 2/\sqrt{29} = \frac{2\cdot\sqrt{29}}{29}$ $\theta' = \sin^{-1}(2/\sqrt{29}) \approx 21.8014°$

Since this point $(5, -2)$ is in quadrant 4 $\theta = 360° - \sin^{-1}(2/\sqrt{29}) \approx 338.199°$

$\cos \theta' = 5/\sqrt{29} = \frac{5\cdot\sqrt{29}}{29}$ $\theta' = \cos^{-1}(5/\sqrt{29}) \approx 21.8014°$

Since this point $(5, -2)$ is in quadrant 4 $\theta = 360° - \cos^{-1}(5/\sqrt{29}) \approx 338.199°$

$\tan \theta' = 2/5 = \frac{2}{5}$ $\theta' = \tan^{-1}(2/5) \approx 21.8014°$

Since this point $(5, -2)$ is in quadrant 4 $\theta = 360° - \tan^{-1}(2/5) \approx 338.199°$