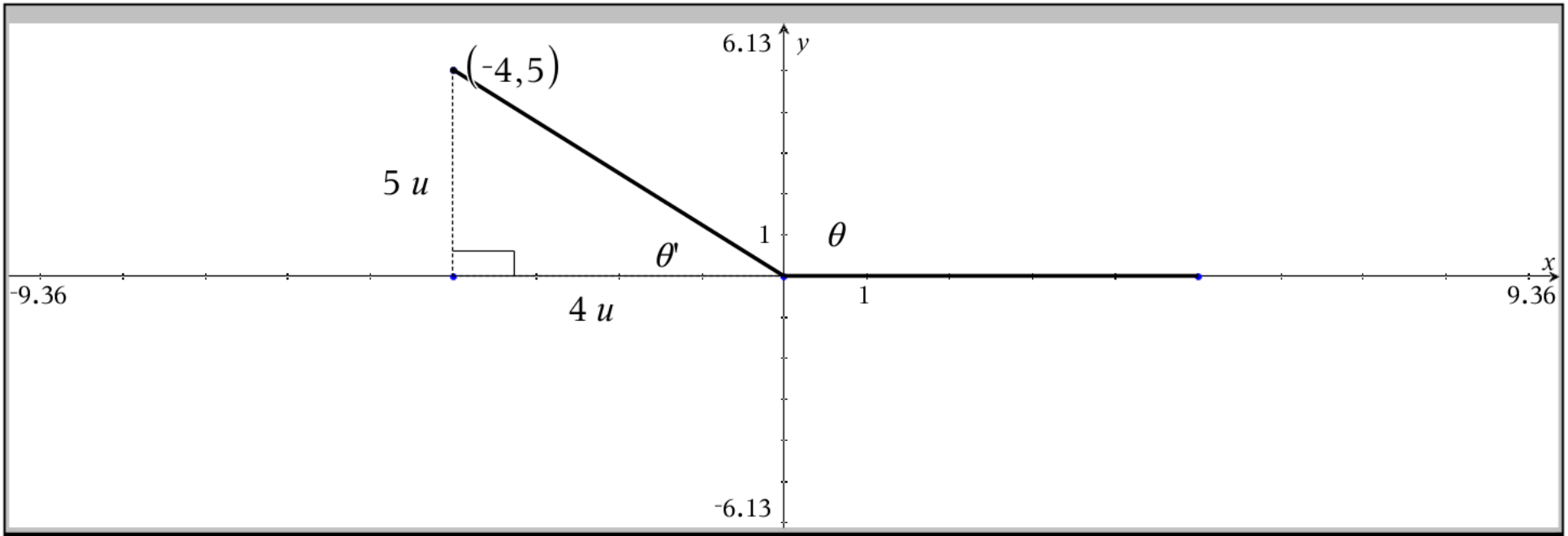
Quadrant 2



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

θ ≈ 128.66 °≈2.24554 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 = $\frac{-4}{5}$

SO..... never calculate the reference angle in any quadrant BUT quadrant 1,

THEN reference into quadrant that the point lies in

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

Since this point $(-4, 5)$ is in quadrant 2 $\quad \theta = 180° - \sin^{-1}(5/\sqrt{41}) \approx 128.66°$

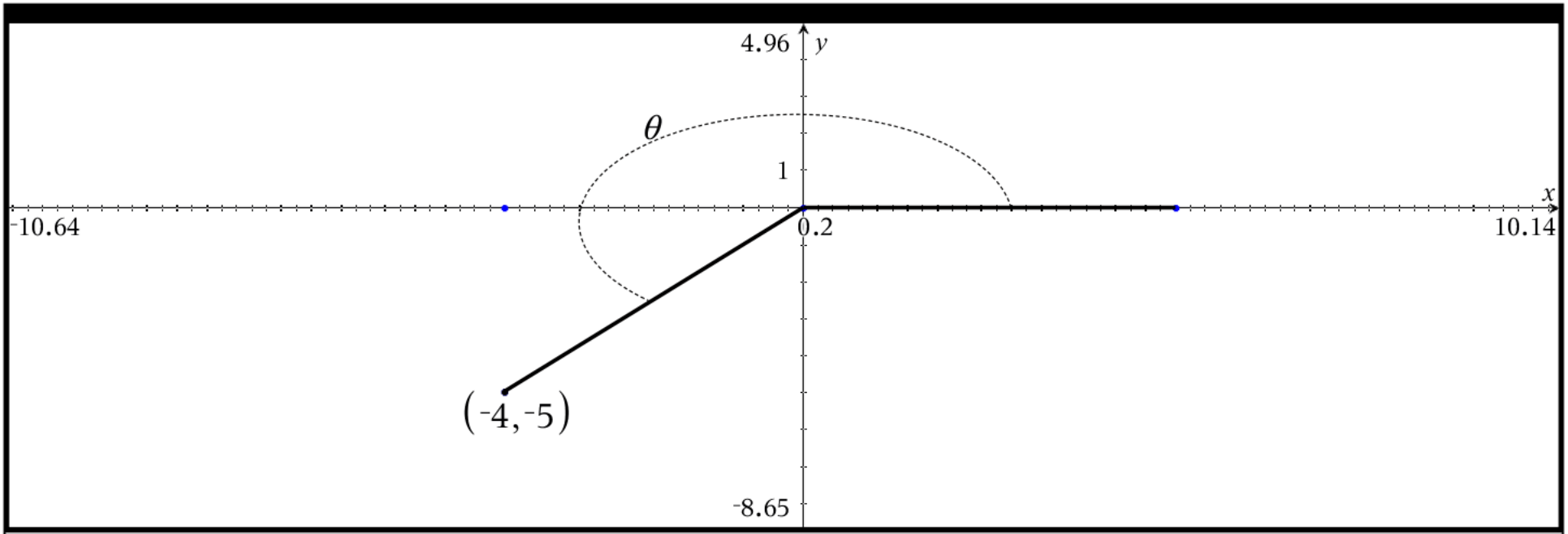
$\cos\theta' = 4/\sqrt{41} = \frac{4\cdot\sqrt{41}}{41}$ $\quad \theta' = \cos^{-1}(4/\sqrt{41}) \approx 51.3402°$

Since this point $(-4, 5)$ is in quadrant 2 $\quad \theta = 180° - \cos^{-1}(4/\sqrt{41}) \approx 128.66°$

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

Since this point $(-4, 5)$ is in quadrant 2 $\quad \theta = 180° - \tan^{-1}(5/4) \approx 128.66°$

Quadrant 3



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

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 = $-4/-5 = \frac{4}{5}$

SO..... never calculate the reference angle in any quadrant BUT quadrant 1,

THEN reference into quadrant that the point lies in

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

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

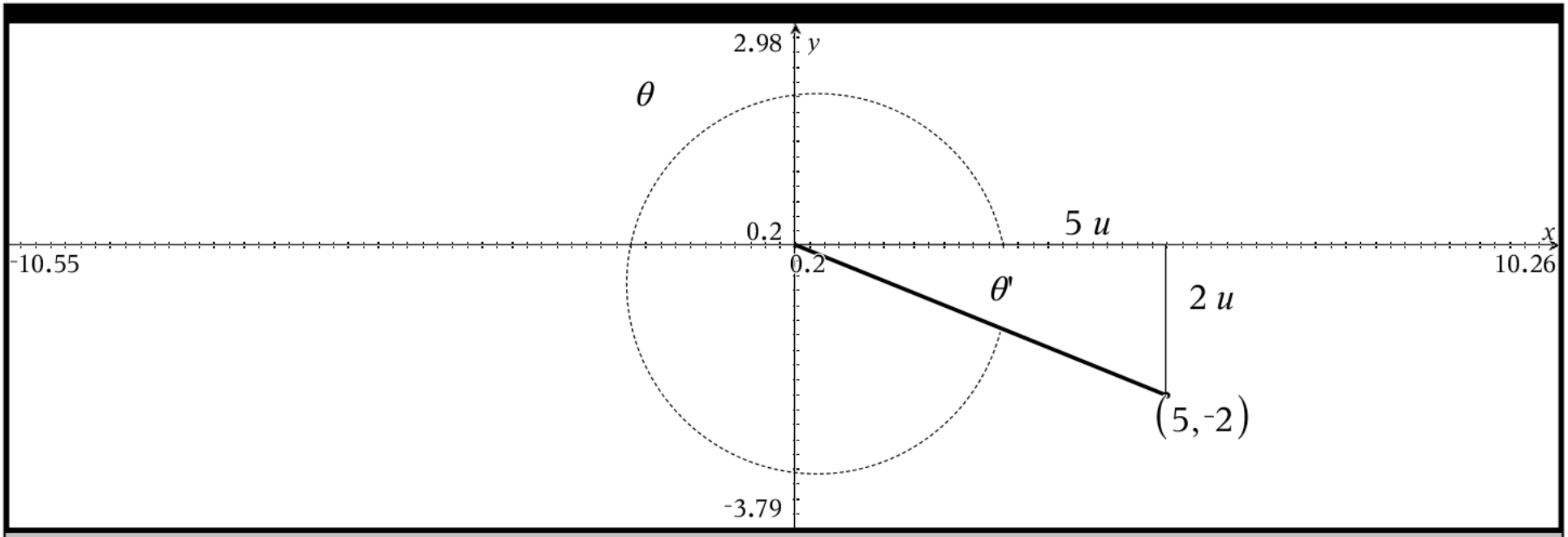
$\cos\theta' = 4/\sqrt{41} = \frac{4\cdot\sqrt{41}}{41}$ $\quad \theta' = \cos^{-1}(4/\sqrt{41}) \approx 51.3402°$

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

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

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

Problem 3



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

θ ≈ 338.199 °≈5.90268 radians θ' =reference angle ≈21.8014 °≈0.380506 radians

sin θ =$-2/\sqrt{29} = \frac{-2\cdot\sqrt{29}}{29}$ cos θ =$5/\sqrt{29} = \frac{5\cdot\sqrt{29}}{29}$ tan θ =$-2/5 = \frac{-2}{5}$

csc θ =$\sqrt{29}/-2 = \frac{-\sqrt{29}}{2}$ sec θ =$\sqrt{29}/5 = \frac{\sqrt{29}}{5}$ cot θ =$5/-2 = \frac{-5}{2}$

SO..... never calculate the reference angle in any quadrant BUT quadrant 1,

THEN reference into quadrant that the point lies in

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

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

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

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

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

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