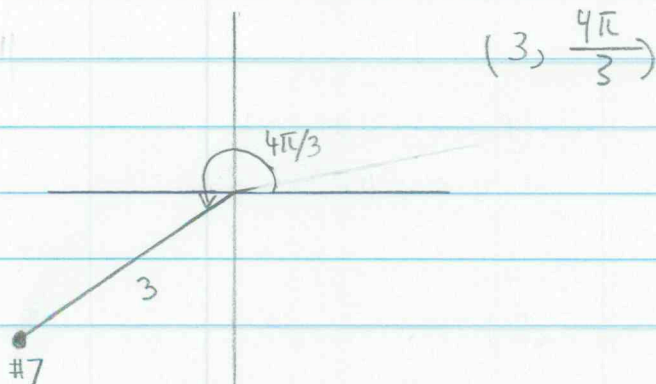


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y

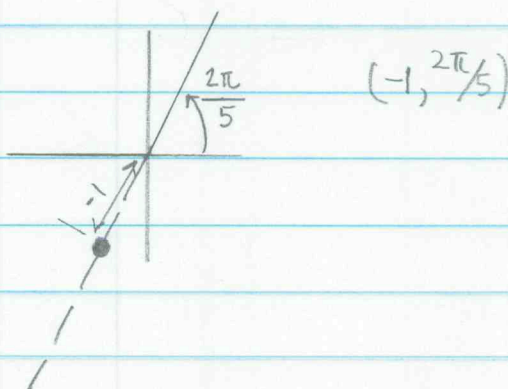
7, 9, 11, 15, 17, 21, 23, 27, 29

#7



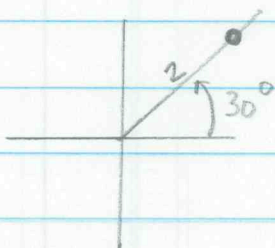
$(3, \frac{4\pi}{3})$

#9



$(-1, \frac{2\pi}{5})$

#11 $(2, 30^\circ)$



#15 $(1.5, 7\pi/3) \Rightarrow r=1.5, \theta=7\pi/3$

$$x = r \cos \theta \Rightarrow x = 1.5 \cos 7\pi/3 = 1.5 \left(\frac{1}{2}\right) = 0.75$$

$$y = r \sin \theta \Rightarrow y = 1.5 \sin 7\pi/3 = 1.5 \left(\frac{\sqrt{3}}{2}\right) = \frac{3\sqrt{3}}{4} \approx 1.30$$

$$\underline{\underline{(x, y) = \left(\frac{3}{4}, \frac{3\sqrt{3}}{4}\right)}}$$

#17 $(-3, -29\pi/7)$

$$x = -3 \cos(-29\pi/7) \approx -2.703$$

$$y = -3 \sin(-29\pi/7) \approx 1.302$$

$$\underline{\underline{(x, y) = (-2.703, 1.302)}}$$

#21 $(2, 270^\circ)$

$$x = 2 \cos(270^\circ) = 2(0) = 0$$

$$y = 2 \sin(270^\circ) = 2(-1) = -2$$

$$\underline{\underline{(x, y) = (0, -2)}}$$

#23 $P(2, \pi/6)$ Find all polar coordinates of P

$$(r, \theta) = (2, \pi/6) \quad \text{or} \quad r = 2, \theta = \pi/6$$

$$\left. \begin{array}{l} (r, \theta + 2\pi n) \Rightarrow (2, \pi/6 + 2n\pi) \\ (-r, \theta + (2n+1)\pi) \Rightarrow (-2, \pi/6 + (2n+1)\pi) \end{array} \right\} \begin{array}{l} n \text{ is any} \\ \text{integer} \\ + \text{ or } - \end{array}$$

Skip
#27

#27 $(x, y) = (1, 1)$ find all (r, θ) names that correspond to (x, y) for

a) $0 \leq \theta < 2\pi$

$$r = \sqrt{x^2 + y^2} = \sqrt{2}$$

b) $-\pi \leq \theta \leq \pi$

$$\theta = \tan^{-1}\left(\frac{y}{x}\right) = \tan^{-1}(1)$$

c) $0 \leq \theta < 4\pi$

$$\theta = \frac{\pi}{4}, \frac{5\pi}{4}$$

$$(x, y) = (1, 1) \quad \text{same as polar coordinate } P(\sqrt{2}, \pi/4)$$