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I have # 27 (vector line) # 24 (sample and 2nd 3rd)

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GOOD EXAMPLE

OPD pp. 365 #1-9, 378 1-19, 23, 25 HW: 31 49.
p. 391 #1-11, p. 402 #1-11

#	Problem	Work	Solution
1.	Find all #s t such that $(\frac{1}{3}, t)$ is a point on the unit circle.	$x^2 + y^2 = 1^2 : (\frac{1}{3})^2 + y^2 = 1$ $1 - \frac{1}{9} = y^2 = \frac{8}{9} = y^2$ $\sqrt{y^2} = \pm \sqrt{\frac{8}{9}} = \pm \frac{\sqrt{8}}{3}$	$= \pm \frac{\sqrt{8}}{3}$
3.	Find all #s t such that pt. $(t, -\frac{4}{5})$ is on the U.C.	$x^2 + (-\frac{4}{5})^2 = 1^2$ $1 - \frac{16}{25} = x^2$ $\frac{25}{25} - \frac{16}{25} = x^2$ $\pm \sqrt{\frac{9}{25}} = \pm \sqrt{x^2}$	$\pm \frac{\sqrt{9}}{5}$
5.	Find pts. @ which line thru origin w/ slope 3 intersects U.C.	$y = 3x$ $(3x)^2 + x^2 = 1$ $9x^2 + x^2 = 10x^2 = 1$ $\sqrt{x^2} = \pm \sqrt{\frac{1}{10}}$ $y = \pm \sqrt{\frac{1}{10}} \cdot 3$ $y = \pm \frac{3}{\sqrt{10}}$	$(\frac{3}{\sqrt{10}}, \frac{9}{\sqrt{10}})$ $(-\frac{3}{\sqrt{10}}, -\frac{9}{\sqrt{10}})$
7.	Ant walks from (1,0) cc. to 70° - how far has he traveled?	$\frac{70}{180} \cdot \pi = \frac{70\pi}{180} = \frac{7\pi}{18}$	$\frac{7\pi}{18}$
9.	What angle corresponds to arc length $\frac{\pi}{5}$?	$\pi = 180^\circ \rightarrow \frac{1}{5} \cdot 180 = 36^\circ$	36°
1.	Convert to Radians: 15°	$15^\circ \cdot \frac{\pi \text{ rad.}}{180^\circ} = \frac{15\pi}{180} = \frac{3\pi}{36} = \frac{\pi}{12} \text{ rad.}$	$\frac{\pi}{12} \text{ rad.}$
3.	-45°	$-45^\circ \cdot \frac{\pi \text{ rad.}}{180^\circ} = \frac{-45\pi}{180} = \frac{-\pi}{4} \text{ rad.}$	$-\frac{\pi}{4} \text{ rad.}$
5.	270°	$270^\circ \cdot \frac{2\pi \text{ rad.}}{360^\circ} = \frac{540\pi}{360} = \frac{27\pi}{18} = \frac{9\pi}{6} = \frac{3\pi}{2}$	$\frac{3\pi}{2} \text{ rad.}$
7.	1080°	$1080^\circ \cdot \frac{\pi \text{ rad.}}{180^\circ} = \frac{1080\pi}{180} = \frac{60\pi}{10} = 6\pi$	$6\pi \text{ rad.}$
9.	Convert to degrees: $4\pi \text{ rad.}$	$4\pi \text{ rad.} \cdot \frac{180^\circ}{\pi \text{ rad.}} = 720^\circ$	720°

BAD EXAMPLE

111

4) $x = 79$ $y = 33$

a) $\sin(79 - 33)$ b) $\sin(79) - \sin(33)$
0.71933398 0.436988148

13) $\cos(x+y)$

$$\sin x = \sqrt{1 - \cos^2 x} = \sqrt{1 - \frac{1}{9}} = \frac{\sqrt{8}}{3} = \frac{\sqrt{4} \cdot \sqrt{2}}{3} = \frac{2\sqrt{2}}{3}$$

$$\cos y = -\sqrt{1 - \sin^2 y} = -\sqrt{1 - \frac{1}{16}} = -\frac{\sqrt{15}}{4} = -\frac{\sqrt{15}}{4}$$

$$\begin{aligned}\therefore \cos(x+y) &= \cos x \cos y - \sin x \sin y \\ &= \frac{1}{3} \cdot \left(-\frac{\sqrt{15}}{4}\right) - \frac{2\sqrt{2}}{3} \cdot \frac{1}{4} \\ &= \frac{-\sqrt{15} - 2\sqrt{2}}{12}\end{aligned}$$

$$\begin{aligned}14) \sin(x-y) &= \sin x \cos y - \sin y \cos x \\ &= \frac{2\sqrt{2}}{3} \cdot \left(-\frac{\sqrt{15}}{4}\right) - \frac{1}{3} \cdot \frac{1}{4} \\ &= \frac{-2\sqrt{30} - 1}{12}\end{aligned}$$