

MATH 121 Exam 3, Sample 3 Answers

- $\frac{1}{2}$
 - $\sqrt{2}$
 - $\frac{\pi}{4}$
 - -1
 - $\frac{\pi}{3}$
- $\tan t = \frac{\sqrt{5}}{2}$ or $\tan t = -\frac{\sqrt{5}}{2}$
- true (Pythagorean Identity)
 - true ($\cos(-x) = \cos x$)
 - true ($\sin(\pi + x) = \sin \pi \cos x + \cos \pi \sin x = -\sin x$)
 - true ($\sin\left(\frac{\pi}{2} + x\right) = \sin \frac{\pi}{2} \cos x + \cos \frac{\pi}{2} \sin x = \cos x$)
- $\frac{v}{\sqrt{1-v^2}}$
- $x = \pm \frac{\pi}{6} \pm n\pi, n = 0, 1, 2, \dots$
- 2
 - $\frac{\pi}{4}$
 - $f(t) = -2 \sin 8x$
- 40 feet
 - 80 seconds
 - $24 + 8\sqrt{2}$ feet
 - 20 seconds
- 8.8 rad/s