Sections 107/120
GSI name: Chan Bae

240904

Multivariable Calculus

Problems 10.2.16, 10.2.74, 10.3.28, 10.3.43, 10.4.7, 10.5.53, 10.5.55

Minimal trig identities

Pythagorean theorem: $\sin^2(x) + \cos^2(x) = 1$ for all x.

Symmetry:

- $\sin(-x) = -\sin(x)$
- $\cos(-x) = \cos(x)$
- $\sin(x + \pi) = -\sin(x)$
- $\cos(x + \pi) = -\cos(x)$

Angle-sum:

- $\sin(x + y) = \sin(x)\cos(y) + \cos(x)\sin(y)$
- $\cos(x + y) = \cos(x)\cos(y) - \sin(x)\sin(y)$

Euler's formula: $e^{ix} = \cos(x) + i\sin(x)$