

## Cheat Sheet-topics

- Definition of limit, continuous functions
- l'Hopital
- Series, criterion for convergence (comparison, integral, alternating, ratio,...)
- Power series radius of convergence
- Taylor's remainder estimate
- Application to diff. eq., Index shift, Examples.
- parametrization by angle, formulae  $|\gamma'|$ , arclenght
- Volume of revolution, area
- Integration techniques (change of variable, integration by parts)
  - The pair tan, sec.
  - The pair cosh, sinh.
  - Some formulae for  $\int (1 \pm x^2)^m dx$ .
  - arcsin, arctan,  $\sinh^{-1}$ ,...
- Polar coordinates