Lesson 1: Review

MA16010: Applied Calculus

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Review

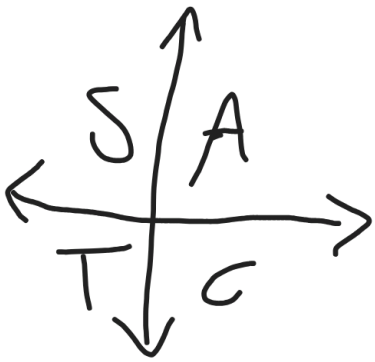
Exponential

1. $x^a x^b = x^{a+b}$
2. $\frac{x^a}{x^b} = x^{a-b}$
3. $(x^a)^b = x^{ab}$
4. $x^1 = x$
5. $x^0 = 1$
6. $\ln e = 1$
7. $\ln 1 = 0$
8. $\ln(e^x) = x$
   $e^{\ln x} = x$

Logarithmic

1. $\ln(xy) = \ln x + \ln y$
2. $\ln\left(\frac{x}{y}\right) = \ln x - \ln y$
3. $\ln(x^m) = m \ln x$

Trigonometric



	0	$\pi/6$	$\pi/4$	$\pi/3$	$\pi/2$
sin	$\sqrt{0}/2$	$\sqrt{1}/2$	$\sqrt{2}/2$	$\sqrt{3}/2$	$\sqrt{4}/2 = 1$
cos	$\sqrt{4}/2$	$\sqrt{3}/2$	$\sqrt{2}/2$	$\sqrt{1}/2$	$\sqrt{0}/2 = 0$

$$\tan\theta = \frac{\sin\theta}{\cos\theta}$$

$$\cot\theta = \frac{\cos\theta}{\sin\theta}$$

$$\csc\theta = \frac{1}{\sin\theta}$$