

MA 159 FORMULA SHEET

The formulas below will be provided on all appropriate quizzes and exams. All other formulas, conversions, and rules not listed below, but used in the homework and/or lectures, will need to be memorized.

$$1 + \tan^2 \theta = \sec^2 \theta$$

$$1 + \cot^2 \theta = \csc^2 \theta$$

$$\sin\left(\frac{\theta}{2}\right) = \pm \sqrt{\frac{1 - \cos\theta}{2}}$$

$$\cos\left(\frac{\theta}{2}\right) = \pm \sqrt{\frac{1 + \cos\theta}{2}}$$

$$\tan\left(\frac{\theta}{2}\right) = \frac{1 - \cos\theta}{\sin\theta}$$

$$\sin 2\theta = 2 \sin\theta \cos\theta$$

$$\cos 2\theta = \cos^2 \theta - \sin^2 \theta$$

$$\tan 2\theta = \frac{2 \tan\theta}{1 - \tan^2 \theta}$$

ADD THESE FOR EXAM 3

$$A = P\left(1 + \frac{r}{n}\right)^{nt}$$

$$A = Pe^{rt}$$

ADD THESE FOR THE FINAL EXAM

$$x^3 - y^3 = (x - y)(x^2 + xy + y^2)$$

$$x^3 + y^3 = (x + y)(x^2 - xy + y^2)$$

Sphere

$$V = \frac{4}{3} \pi r^3 \quad S = 4\pi r^2$$

Closed Right Circular Cylinder

$$V = \pi r^2 h \quad S = 2\pi rh + 2\pi r^2$$

Closed Right Circular Cone

$$V = \frac{1}{3} \pi r^2 h \quad S = \pi r \sqrt{r^2 + h^2} + \pi r^2$$

EXAMS 1&2