MA 15900 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.

ADD THESE FOR EXAM 3

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

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

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

$$A = Pe^{rt}$$

ADD THESE FOR THE FINAL EXAM

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

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

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

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

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

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

EXAMS 1&2

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

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

Sphere

$$V = \tfrac{4}{3}\pi r^3 \qquad S = 4\pi r^2$$

Closed Right Circular Cylinder

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

Closed Right Circular Cone

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