Formulas given on the cover sheet for the MA 15800 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
$V = \frac{4}{3}\pi r^3 \qquad S = 4\pi r^2$

Compound Interest
$A = P\left(1 + \frac{r}{n}\right)^{nt} \qquad A = Pe^{rt}$

Pythagorean Identities
$\sin^2\theta + \cos^2\theta = 1$
$1 + \tan^2\theta = \sec^2\theta$
$1 + \cot^2\theta = \csc^2\theta$

Half-Angle Identities
$\sin\left(\frac{\theta}{2}\right) = \pm\sqrt{\frac{1 - \cos\theta}{2}}$ $\qquad \cos\left(\frac{\theta}{2}\right) = \pm\sqrt{\frac{1 + \cos\theta}{2}}$ $\qquad \tan\left(\frac{\theta}{2}\right) = \frac{1 - \cos\theta}{\sin\theta}$

Closed Right Circular Cylinder
$V = \pi r^2 h \qquad S = 2\pi rh + 2\pi r^2$

Closed Right Circular Cone
$V = \frac{1}{3}\pi r^2 h \qquad S = \pi r\sqrt{r^2 + h^2} + \pi r^2$

Law of Cosines
$a^2 = b^2 + c^2 - 2bc\cos\alpha$

Double-Angle Identities
$\sin 2\theta = 2\sin\theta\cos\theta$
$\cos 2\theta = \cos^2\theta - \sin^2\theta$
$\tan 2\theta = \frac{2\tan\theta}{1 - \tan^2\theta}$