Possibly helpful formula sheet (Exam #1)

Unit Conversions:
1 inch = 2.54 cm
1 mile = 1.609 km = 1,609 m

Average velocity: $\bar{v} = \frac{\Delta x}{\Delta t}$  
Average acceleration: $\bar{a} = \frac{\Delta v}{\Delta t}$

Equations for motion with constant acceleration:
$v = v_0 + a\Delta t$
$x = x_0 + v_0 \Delta t + \frac{1}{2} a\Delta t^2$
$v^2 = v_0^2 + 2a(x - x_0)$
$\bar{v} = \frac{v + v_0}{2}$
$x = x_0 + \bar{v}_{\text{average}} \Delta t$

Magnitude of acceleration from gravity at the Earth’s surface: $g = +9.81 \, \text{m/s}^2$
(by convention, the symbol $g$ is ALWAYS positive!)

$\pi \approx 3.14$
$\sin(\theta) = \frac{\text{opposite}}{\text{hypotenuse}}$
$\cos(\theta) = \frac{\text{adjacent}}{\text{hypotenuse}}$
$\tan(\theta) = \frac{\text{opposite}}{\text{adjacent}}$

Quadratic Equation:

$$ax^2 + bx + c = 0$$

Solution: $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$