AREA UNDER A CURVE
If $y = f(x)$ is nonnegative and integrable over a closed interval $[a,b]$, then the area under the curve $y = f(x)$ from $a$ to $b$ is equal to:

$$ A = \int_{a}^{b} f(x) \, dx $$

AREA UNDER A CURVE
Remember, too, that:

$$ \int_{a}^{b} f(x) \, dx = (\text{Area above the x-axis}) - (\text{Area below the x-axis}) $$
INTEGRALS ON CALCULATORS
Use the "NINT" function to find the values of the following integrals:

(a) \[ \int_{0}^{1} \frac{4}{1 + x^2} \, dx = \pi \]

(b) \[ \int_{0}^{5} e^{-x^2} \, dx = .886 \]

**HOMEWORK:** p.282 #8-36e, 41-46
\[ \int_{3}^{7} (-20) \, dx \]