

# Test 1

## FORMULAS

### Date

Thursday, Sept 15, 2009

### Time

9:30 – 10:45 a.m. or  
11:00 – 12:15

### Chapters

0.1, 0.2, 0.4 - 0.6,  
1.1 - 1.3, 1.6 - 1.8

- Break Even:  $P(x) = 0$  or  $R(x) = C(x)$
- $R(x) = x \cdot p(x)$  ;  $p(x) = \text{price}$
- Laws of Exponents:  $b^r \cdot b^s = b^{r+s}$   
 $b^{-r} = \frac{1}{b^r}$  ;  $\frac{b^r}{b^s} = b^{r-s}$  ;  $(b^r)^s = b^{rs}$
- Compound Amount:  $A = P\left(1 + \frac{r}{m}\right)^{mt}$
- Geometry Areas and Volumes:  
Square Area =  $S^2$  ; Rectangle Area =  $L \cdot W$ ;  
Volume of Rectangular Prism =  $L \cdot W \cdot H$
- Slope =  $m = \frac{y_2 - y_1}{x_2 - x_1}$
- Point-Slope Form:  $y - y_1 = m(x - x_1)$
- First derivative = slope of tangent line
- "Marginal" = first derivative

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- Cost function = variable costs + fixed costs  $\rightarrow C(x) = mx + b$
- $m_{\text{sec}} = \frac{f(b) - f(a)}{b - a}$
- If  $f(x) = a \cdot x^n$ , then  $f'(x) = a \cdot n \cdot x^{n-1}$
- If  $f(x) = (x + a)^n$ , then  $f'(x) = n \cdot (x + a)^{n-1} \cdot \frac{d}{dx}(x + a)$
- $s(t)$  = position function
- $s'(t) = v(t)$  = velocity function
- $s''(t) = v'(t) = a(t)$  = acceleration function
- Profit = Revenue – Cost
- Quadratic Formula =  $\frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$