Some formulas to know for the Final Exam:

Chapter 3

Section 3A:

Absolute difference $=$ Compared value $-$ Reference value   page 140

$$\text{Relative difference} = \frac{\text{Absolute difference}}{\text{Reference value}} = \frac{\text{Compared value} - \text{Reference value}}{\text{Reference value}}$$ page 140

Chapter 4

Section 4B:

Interest compounded n times a year:

$$A = P\left(1 + \frac{APR}{n}\right)^{(nY)}$$ page 235

$$APY = \left(1 + \frac{APR}{n}\right)^{n} - 1$$ The definition is given on page 237 (formula given in class).

Interest compounded continuously:

$$A = P\, e^{(APR \times Y)}$$ page 239

$$APY = e^{APR} - 1$$ The definition is given on page 237 (formula given in class).

Section 4C:

Note: The Savings Plan Formula (page 247) will be given on the exam, but be sure to know how the variables are defined.

Section 4D:

The Loan Payment Formula (page 271) will be given on the exam, but be sure to know how the variables are defined.

Chapter 8

Section 8B:

$$Q = Q_0 \times 2^{t/T_{\text{double}}}$$ page 524 (with notation from section 9C)

$$Q = Q_0 \times \left(\frac{1}{2}\right)^{t/T_{\text{half}}}$$ page 528 (with notation from section 9C)

$$T_{\text{double}} \approx \frac{70}{P}$$ page 527 (note: P is a percentage, not a decimal)

$$T_{double} = \frac{\log_{10} 2}{\log_{10}(1+r)}$$ page 530

$$T_{half} \approx \frac{70}{P}$$ page 529 (note: P is a percentage, not a decimal)

$$T_{half} = -\frac{\log_{10} 2}{\log_{10}(1+r)}$$ page 530

Properties of logarithms: page 531 (some of these were only given in class)

$$\log_b b^x = x$$

$$b^{\log_b x} = x$$

$$\log_b xy = \log_b x + \log_b y$$

$$\log_b a^x = x \log_b a$$

$$\log_b \frac{x}{y} = \log_b x - \log_b y$$

$$\log_b \frac{1}{x} = -\log_b x$$

$$\log_b 1 = 0$$

$$\log_b b = 1$$

Chapter 9

Section 9B:

$$m = \text{rate of change} = \text{slope} = \frac{\text{change in dependent variable}}{\text{change in independent variable}} = \frac{y_2 - y_1}{x_2 - x_1}$$ page 572

$$y = mx + b$$ page 577

Section 9C:

$$Q = Q_0 \times (1+r)^t$$ page 587

Chapter 10

Section 10A:

    Perimeter and Area Formulas: (page 608)

Circle:	$P = C = 2\pi r = \pi d$	$A = \pi r^2$
Square:	$P = 4l$	$A = l^2$
Rectangle:	$P = 2l + 2w$	$A = lw$
Parallelogram:	$P = 2l + 2w$	$A = lh$
Triangle:	$P = a + b + c$	$A = \dfrac{1}{2} bh$

    Volume Formulas: (page 612)

Sphere:	$V = \dfrac{4}{3} \pi r^3$
Rectangular prism (box):	$V = lwh$
Cylinder:	$V = \pi r^2 h$

Section 10B:

    $a^2 + b^2 = c^2$ page 626