

Mathematical Concepts — Joysheet 1  
MAT 117, Spring 2011 — D. Ivanić

Name: Solution

Show all your work!

Use your calculator to compute each expression to 6 significant digits accuracy. Write down the sequence of keys you entered in order to compute each expression. Do not round numbers in mid-computation.

1. (5pts)  $\sqrt[3]{21} = \boxed{1.544858}$       Graphing:  $21^{(1/3)}$   
Scientific:  $21 \sqrt{x} 7$

2. (9pts)  $1450 \left(1 + \frac{0.03}{12}\right)^{36} = \boxed{1586.374531}$       G:  $1450 * (1 + 0.03/12)^{36}$   
S:  $1 + 0.03/12 \Rightarrow \sqrt{x} 36 \Rightarrow \times 1450$

3. (7pts)  $4(\sqrt[3]{5} - 1) = \boxed{0.574119}$       G:  $4 * (5^{(1/3)} - 1)$   
S:  $5 \sqrt{x} 12 \Rightarrow - 1 \Rightarrow \times 4$

4. (6pts)  $\frac{\log 0.3345}{\log 7.34} = \boxed{-0.549389}$       G:  $\log(0.3345) / \log(7.34)$   
S:  $0.3345 \log \div 7.34 \log \Rightarrow$

5. (9pts)  $\frac{\log(6.35)}{17 \log 3.17} = \boxed{0.0942443}$       G:  $\log(6.35) / (17 * \log(3.17))$   
S:  $6.35 \log \Rightarrow \div 17 * 3.17 \log \Rightarrow \Rightarrow$

6. (12pts)  $\frac{\left(1 + \frac{0.045}{12}\right)^{24} - 1}{\frac{0.045}{12}} = \boxed{25.064031}$       G:  $((1 + 0.045/12)^{24} - 1) / (0.045/12)$   
S:  $0.045/12 \Rightarrow + 1 \Rightarrow \sqrt{x} 24 \Rightarrow - 1$   
 $\Rightarrow \div 0.045 \Rightarrow 12 \Rightarrow \Rightarrow$

7. (12pts)  $\frac{1 - \left(1 + \frac{0.0575}{12}\right)^{-180}}{\frac{0.0575}{12}} = \boxed{120.422429}$       G:  $(1 - (1 + 0.0575/12)^{-180}) / (0.0575/12)$   
S:  $0.0575 \Rightarrow 12 \Rightarrow + 1 \Rightarrow \sqrt{x} 180 \Rightarrow - 1$   
 $\Rightarrow \div 0.0575 \Rightarrow 12 \Rightarrow \Rightarrow$