

1. Approximate each logarithm to four decimal places by using the change of base formula. Show your work.

a)  $\log_5 2$

b)  $\log_{\frac{1}{2}} 3$

c)  $\log_6 \frac{2}{3}$

**Do these next two problems on a separate sheet of paper.**

2. The compound interest formula is  $A = P(1 + \frac{r}{n})^{nt}$  where  $n$  represents the number of compounding per year,  $P$  is the initial deposit,  $t$  is the number of years, and  $A$  is the amount accrued. If you deposit \$1000 now in an account that pays 6% interest compounded monthly, how long do you have to wait until you have \$5000?

- Clearly define your variables.
- Identify the facts.
- Solve the problem.
- State your answer in a complete sentence in the context of the problem.

3. Recall that if we continuously compound interest, the formula becomes  $A = Pe^{rt}$ . Find the amount of money for which a \$2500 certificate of deposit is redeemable if it has been paying 10% interest compounded continuously for 3 years.

- Clearly define your variables.
- Identify the facts.
- Solve the problem.
- State your answer in a complete sentence in the context of the problem.