

**Math 146 formula sheet, blank version:**

name \_\_\_\_\_

You will get some points on the test for knowing these formulas, and being able to fill out this form correctly. After everyone has completed their sheet, you will get a correctly filled in form (see next page) to use on the test.

**Logarithm formulas**

Complete each formula:

(2 pts)  $\log_b n + \log_b m =$

(2 pts)  $\log_b n - \log_b m =$

(2 pts)  $\log_b n^k =$

(3 pts) Write  $\log_b n = m$  as an equivalent exponential equation:**Understanding interest rate equations**

The interest rate equations are:

$$A = P \left( 1 + \frac{r}{n} \right)^{nt} \text{ for interest compounded } n \text{ times per year and}$$

$$A = P e^{rt} \text{ for interest compounded continuously.}$$

Tell what each variable represents:

(1 pt)  $r$  is(1 pt)  $t$  is(1 pt)  $P$  is(1 pt)  $A$  is**The quadratic formula.**(3 pts) If  $ax^2 + bx + c = 0$  then  $x =$ **The slope of a line through two points  $(x_1, y_1)$  and  $(x_2, y_2)$  is**(2 pts)  $m =$ **The point-slope form of a line that has slope  $m$  and includes the point  $(x_1, y_1)$  is**

(2 pts)

## Math 146 formula sheet, completed version:

### Logarithm formulas

$$\log_b n + \log_b m = \log_b (n \cdot m)$$

$$\log_b n - \log_b m = \log_b \left( \frac{n}{m} \right)$$

$$\log_b n^k = k \log_b n$$

$$\log_b n = m \text{ is equivalent to } b^m = n$$

$$\log_b(n) = \frac{\log n}{\log b} \quad \text{and} \quad \log_b(n) = \frac{\ln(n)}{\ln(b)}$$

### Understanding interest rate equations

The interest rate equations are:

$$A = P \left( 1 + \frac{r}{n} \right)^{nt} \text{ for interest compounded } n \text{ times per year and}$$

$$A = P e^{rt} \text{ for interest compounded continuously.}$$

Tell what each variable represents:

$r$  is the yearly interest rate (as a decimal)

$t$  is the time as a number of years

$P$  is the principal amount invested, which is also called the present value.

$A$  is the amount at the end of  $t$  years.

### The quadratic formula.

$$\text{If } ax^2 + bx + c = 0 \text{ then } x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

The slope of a line through two points  $(x_1, y_1)$  and  $(x_2, y_2)$  is

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

The point-slope form of a line that has slope  $m$  and includes the point  $(x_1, y_1)$  is

$$y - y_1 = m(x - x_1)$$