

Complete as many of the following problems as you can with your table. You do not have to go in order. If **your entire table** finishes early, and your answers have been checked, you may leave early.

1. Simplify the following:

(a)  $\log_5 5\sqrt{5}$

(c)  $\log_9 27$

(b)  $\ln\left(\frac{1}{e}\right)$

(d)  $\log_4 \frac{1}{32}$

2. Solve for  $x$ :

(a)  $10^x = 25$

(c)  $6 - \log x = 3$

(b)  $e^{2x+3} = 10$

(d)  $5 \ln(2x) + 6 = 12$

3. Find the domain of the following functions:

(a)  $y = \log(7x + 1)$

(b)  $y = \log_8(x^2 - 2x - 63)$

4. Graph the following. Make sure you indicate any asymptotes and intercepts.

(a)  $y = 3 - \log_2(-x)$

(b)  $y = \ln(x + 4)$

Key:

1. (a)  $3/2$   
(b)  $-1$   
(c)  $3/2$   
(d)  $-5/2$

2. (a)  $\log(25)$   
(b)  $\ln 10 - 3/2$   
(c)  $1000$   
(d)  $e^{6/5}/2$

3. (a)  $(-1/7, \infty)$   
(b)  $(-\infty, -7) \cup (9, \infty)$

4. Check your answers online or with a graphing calculator