

# 11-3 Logarithms Part 1

Name: \_\_\_\_\_

Time Start: \_\_\_\_\_ Finish: \_\_\_\_\_ Total Time = \_\_\_\_\_

Evaluate each expression without using a calculator.

1.  $\log_3 9 =$  \_\_\_\_\_

2.  $\log_2 4 =$  \_\_\_\_\_

3.  $\log_3 9 =$  \_\_\_\_\_

4.  $\log_5 25 =$  \_\_\_\_\_

5.  $\log_2 16 =$  \_\_\_\_\_

6.  $\log_{10} 100 =$  \_\_\_\_\_

7.  $\log_{10} 1000 =$  \_\_\_\_\_

8.  $\log_5 625 =$  \_\_\_\_\_

9.  $\log_2 128 =$  \_\_\_\_\_

10.  $\log_2 \frac{1}{8} =$  \_\_\_\_\_

11.  $\log_5 \frac{1}{25} =$  \_\_\_\_\_

12.  $\log_{\frac{1}{2}} \frac{1}{2} =$  \_\_\_\_\_

13.  $\log_2 32 =$  \_\_\_\_\_

14.  $\log_8 1 =$  \_\_\_\_\_

15.  $\log_7 7 =$  \_\_\_\_\_

16.  $\log_4 64 =$  \_\_\_\_\_

You cannot find an exact answer without using a calculator, but use your head to think of an approximate answer to the following problems.

17.  $\log_{10} 962 =$  \_\_\_\_\_

18.  $\log_{10} 86 =$  \_\_\_\_\_

19.  $\log_5 100 =$  \_\_\_\_\_