Logarithms (log base 10)

You may use your calculator for all computations.

1. Determine: log 10 log 100 log 50

2. Is the log of 50 half-way between the log of 10 and the log of 100? To find out what percentage of the distance between log 10 and log 100 is covered calculate the following:

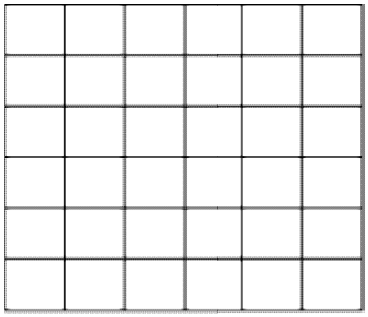
$$\frac{\log 50 - \log 10}{\log 100 - \log 10} \times 100\%$$

3. Determine: log 100 log 1000 log 500

4. Is the log of 500 the same percentage along the distance between log 100 and log 1000?

In a certain time interval the following values were recorded:

Time	**Distance**
0 sec	0
1 sec	100
2 sec	10,000
3 sec	1,000,000
4 sec	100,000,000



5. What difficulty exists when graphing these values?

6. Graph the log of the distance vs. time. Is this graph linear?

7. Determine: log 0.1 log 0.01 log 0.05

8. Is the log of 0.05 half-way between the log of 0.1 and the log of 0.01? Calculate the percentage as before.

9. What number would have a value half-way between log 10 and log 100?

10. Explain this rule in words and by giving examples: $\log x = -\log 1/x$

11. Explain this rule in words and by giving examples: $\log x^n = n\log x$