Name:
Date:

Check for Understanding 1

Required Materials: Throughout this activity you may use any FiCycle LOGS you like.

Part I: Match each expression with the equivalent expression.

1. LOG(A) + LOG(B)
2. LOG(A) – LOG(B)
3. B • LOG A
4. LOG 1

a. LOG A/B
b. 0
c. LOG A•B
d. LOG A^B

Part II: Basic Exercises. Simplify each expression to a single LOG of a number.

5. LOG 5 + LOG 4 =
6. LOG ½ + LOG ¾ =
7. LOG 10 – LOG 5 =
8. LOG 100 – LOG 5 =
9. LOG 30 – LOG 30=
10. 5 • LOG 2 =
11. 2 • LOG 8 =
12. 3 • LOG 5 =

Part III: Express each single LOG as a sum or difference of LOGS.

13. LOG (5•10) = LOG _____ + LOG _____
14. LOG $8x$ = LOG _____ + LOG _____
15. LOG xy = LOG _____ + LOG _____
16. LOG $\frac{16}{4}$ = LOG _____ – LOG _____
17. LOG $\frac{x}{4}$ = LOG _____ – LOG _____
18. LOG $\frac{x}{y}$ = LOG _____ – LOG _____

Part IV: Express each LOG as a product.

19. LOG x^2 =

20. LOG 5^x =

21. LOG x^z =

Part V: These questions are a little harder and may require you to use findings from multiple lessons.

22. LOG x^2 + LOG x^{10} =

23. LOG $(2x)$ = LOG 2 + LOG _____

24. LOG 10 = LOG 2 + LOG ____

25. LOG 10 = LOG 100 – LOG ____

26. LOG $\left(\frac{Q}{7}\right)$ = LOG ____ – LOG ____

27. 6 • LOG 2 + 4 • LOG 2 =

28. 2 • LOG 3 + 4 • LOG 2 =

29. 20 • LOG 2 – 10 • LOG 2 =

30. ¼ • LOG 16 =

31. ½ • LOG 16 =

32. 5,434 • LOG 1 +3 π • LOG 1 =

33. LOG 1 • $(\sum_{n=1}^{100} e^{n+1} \bullet 27\pi n)$=

Part VI: Using the LOG rules, break apart each single LOG into a sum, product, and/or difference of as many different LOGS as possible.

34. LOG $\frac{2x}{7y}$ =

35. LOG $\left(\frac{5x}{3y}\right)^4$ =

36. LOG $\left(\frac{8x^3}{9y}\right)^4$ =