

Exercise Algebra 2
Properties of Logarithms (II)

Factorization

1. $\log(a^2) = 2 \log a$
 $\log(a^2) = 2 \log a$

2. $\log(a^3) = 3 \log a$
 $\log(a^3) = 3 \log a$

3. $\log(a^4) = 4 \log a$
 $\log(a^4) = 4 \log a$

4. $\log(a^5) = 5 \log a$
 $\log(a^5) = 5 \log a$

5. $\log(a^6) = 6 \log a$
 $\log(a^6) = 6 \log a$

6. $\log(a^7) = 7 \log a$
 $\log(a^7) = 7 \log a$

7. $\log(a^8) = 8 \log a$
 $\log(a^8) = 8 \log a$

8. $\log(a^9) = 9 \log a$
 $\log(a^9) = 9 \log a$

9. $\log(a^{10}) = 10 \log a$
 $\log(a^{10}) = 10 \log a$

10. Express as a single log

1. $\log 20 + \log 3$
 $\log(20 \cdot 3)$

2. $\log 4 + \log 5$
 $\log(4 \cdot 5)$

3. $\log 6 + \log 10 + \log 20$
 $\log(6 \cdot 10 \cdot 20)$

4. $\log 8 + \log 9 + \log 27$
 $\log(8 \cdot 9 \cdot 27)$

5. $\log 2 + \log 3$
 $\log(2 \cdot 3)$

6. $\log 4 + \log 5 + \log 10$
 $\log(4 \cdot 5 \cdot 10)$

7. $\log 8 + \log 9 + \log 27$
 $\log(8 \cdot 9 \cdot 27)$

8. $\log(2^2) + \log(3) + \log(4)$
 $\log(2^2 \cdot 3 \cdot 4)$

11. Use the properties of log to simplify these expressions

1. $\log 20 + \log 3$
 $\log(20 \cdot 3) = \log 60$

2. $\log 6 + \log 10 + \log 20$
 $\log(6 \cdot 10 \cdot 20) = \log 1200$