

NAME: _____

P.I. A2.A.19: Apply the properties of logarithms to rewrite logarithmic expressions in equivalent forms

1. Given $\log_{10} 7 = X$ and $\log_{10} 5 = Y$, find $\log_{10} 35$.

[A] XY [B] 10^{XY}
[C] 10^{X+Y} [D] $X + Y$

2. Given $\log_{10} 2 = S$ and $\log_{10} 3 = T$, find $\log_{10} 6$.

[A] 10^{ST} [B] 10^{S+T}
[C] $S + T$ [D] ST

3. Given $\log_{10} 11 = P$ and $\log_{10} 7 = Q$, find $\log_{10} 77$.

[A] PQ [B] $P + Q$
[C] 10^{P+Q} [D] 10^{PQ}

4. Given $\log_{10} 3 = M$ and $\log_{10} 11 = N$, find $\log_{10} 33$.

[A] $M + N$ [B] MN
[C] 10^{M+N} [D] 10^{MN}

5. Write the equation $5^2 = 25$ in logarithmic form.

[A] $\log_2 25 = 5$ [B] $\log_{25} 5 = 2$
[C] $\log_5 25 = 2$ [D] $\log_{\frac{1}{2}} 25 = 5$

6. Write the equation $3^5 = 243$ in logarithmic form.

[A] $\log_{243} 3 = 5$ [B] $\log_5 243 = 3$
[C] $\log_3 243 = 5$ [D] $\log_{\frac{1}{5}} 243 = 3$

7. Write the equation $4^2 = 16$ in logarithmic form.

[A] $\log_{16} 4 = 2$ [B] $\log_2 16 = 4$
[C] $\log_4 16 = 2$ [D] $\log_{\frac{1}{2}} 16 = 4$

8. Given $\log_z 5 = 0.774$ and $\log_z 7 = 0.936$, find $\log_z 35$.

[A] 0.162 [B] 1.710
[C] 0.724 [D] 2.724

9. Given $\log_z 7 = 1.209$ and $\log_z 11 = 1.490$, find $\log_z 77$.

[A] 2.699 [B] 3.801
[C] 1.801 [D] 0.281

10. Given $\log_z 5 = 1.000$ and $\log_z 7 = 1.209$, find $\log_z 35$.

[A] 2.209 [B] 3.209
[C] 0.209 [D] 1.209

- [1] D
- [2] C
- [3] B
- [4] A
- [5] C
- [6] C
- [7] C
- [8] B
- [9] A
- [10] A