Properties of Logarithms	Properties of Exponents
$\log\left(\square \bullet \Delta\right) = \log\square + \log\Delta$	$x^{\square} \bullet x^{\Delta} = x^{\square+\Delta}$
$\log\left(\dfrac{\square}{\Delta}\right) = \log\square - \log\Delta$	$\dfrac{x^{\square}}{x^{\Delta}} = x^{\square-\Delta}$
$\log\square^{\rho} = \rho\log\square$	$\square^{\log_{\square}\Delta} = \Delta$
$\log_{\square}\square^{\Delta} = \Delta$	

Find simpler expressions for each of the following quantities:

1. $e^{\ln 7.2}$	2. $e^{-\ln x^2}$	3. $e^{\ln x - \ln y}$
4. $e^{\ln(x^2+y^2)}$	5. $e^{-\ln 0.3}$	6. $e^{\ln \pi x - \ln 2}$
7. $2\ln\sqrt{x}$	8. $\ln(\ln e^e)$	9. $\ln e^{-x^2-y^2}$
10. $\ln e^{\sec\theta}$	11. $\ln e^{e^x}$	12. $\ln e^{2\ln x}$
13. $e^{x+\ln x}$	14. $\ln\left[\dfrac{e^x}{x}\right]$	15. $\ln\left(x^e e^x\right)$

Answers:

1) 7.2	2) x^{-2}	3) $\dfrac{x}{y}$	4) x^2+y^2	5) $\dfrac{10}{3}$
6) $\dfrac{\pi x}{2}$	7) $\ln x$	8) 1	9) $-x^2-y^2$	10) $\sec\theta$
11) e^x	12) $\ln x^2$ or $2\ln x$	13) xe^x	14) $x-\ln x$	15) $e\ln x + x$