

Name _____

6-7 Review

1. Solve the equation $2^{4x} = 4^{x+8}$. [A] $\frac{8}{3}$ [B] 2 [C] 8 [D] 10

[1] _____

Solve the equation for x . Write the exact solution and the approximate solution to the nearest hundredth, when appropriate.

2. $\ln 2x - 4 = 5$ [A] $\frac{e^{-4} - 2}{5} \approx \pm 0.4$ [B] $\frac{e^5 - 4}{2} \approx 72.21$ [C] $\frac{e^5 + 4}{2} \approx 76.21$ [D] $\frac{e^{-4} + 2}{5} \approx 0.4$

[2] _____

3. $16^{8x-7} = 64$

[3] _____

4. $\ln 4x = 10$

[4] _____

5. The magnitude of an earthquake is found by the equation $M = \frac{2}{3} \log \frac{E}{10^{11.8}}$, where M is the magnitude and E is the energy released. Find the magnitude of an earthquake that released $10^{19.5}$ ergs of energy.

- [A] 5.1 [B] 4.8 [C] 4.1 [D] 7.7

[5] _____

6. The formula for estimating the number, N , of a certain product sold is $N = 3400 \ln 3t + 2$ where t is the number of years after the product is introduced. What is the expected number of sales 3 years after the product is introduced? Round to the nearest whole number.

[A] 8153

[B] 7473

[C] 11,208

[D] 7475

[6] _____