This practice exam is for review purposes only; the actual exam may differ in format and content. Use it as a study aid, and refer to the syllabus for specific details. Solutions with explanations can be found on my YouTube channel. - Robert Pearce

Name:_____

1. Simplify the expression: $\frac{(-4)^3 x^8 (yz)^2}{(5)^2 x y^8 z^8}$

2. Simplify the expression: $(\frac{6x^{-8}}{7y^{-2}})^{-3}$

3. Find the inverse of the function: $f(x) = \frac{8x+9}{3x-8}$

4. Rewrite exp $\rightarrow$ log: $16 = 4^2$

5. Rewrite log $\rightarrow$ exp: $\log_2(16) = 3$

6. Solve for x: $8^{-x+32} = 32^x$

7. Solve for x: $\log_2(4x + 7) = 4$

Cont.

8. Evaluate the following without using a calculator: $\log_2(2^{63})$

9. Evaluate the following without using a calculator: $3^{\log_3(7)}$

10. Rewrite the expression as one logarithm: $6\log_3(U) + 5\log_3(V)$

11. Solve for x: $\log_2(x) = 3$

Cont.

12. Solve: $\log(x) + \log(x - 15) = 2$

13. Simplify: $125^{-2/3}$

14. Rewrite with radicals: $(4b)^{4/7} - (9s)^{5/9}$

15. Solve: $e^{x^2} = e^{8x} \times \frac{1}{e^{15}}$

Cont.

16. You place \$4,000 in a bank account with 2.5% interest rate compounded monthly. How much will you have in the account after 4 years?

17. Kryptonite is a radioactive isotope that decays according to the function $A(t) = A_0 e^{-0.0244t}$, where A_0 is the initial amount present and A is the amount present at time t (in years). Assume we have a 400-gram sample of Kryptonite.

a) What is the decay constant k?

b) How much Kryptonite is left after 40 years?

c) When will only 300-grams of the Kryptonite be left?

d) What is the half-life of the Kryptonite?

The End.