

Test 4, Chapter 4

Name _____

Work 10 of the following 12 problems. Omit two (2). If you omit a problem, write OMIT in the space provided. Otherwise, I'll grade the first 10 problems I come to, whether you work them or not.

1. Graph $f(x) = 5^x$

2. Graph $g(x) = -5^{1-x} + 7$ by transforming the basic function $f(x) = 5^x$

3. Find the inverse of the function $g(x) = -5^{1-x} + 7$

4. Graph $h(x) = -\log_5(x-3)$

5. Solve $\log_5(x-4) + \log_5(x+2) = \log_5(7)$ for x .

6. Solve for t : $A = P\left(1 + \frac{r}{m}\right)^{mt}$.

7. Solve $-5^{1-x} + 7 = 0$ for x . Give an exact answer and then round to 4 decimal places. If you use this to supply the x -intercept for the appropriate graph on Page 1, it's worth a couple bonus points.

8. Solve $5^{x-1} = 3^x$ for x . Give an exact answer and then round your answer to 4 decimal places.

9. Radioactive Wieligminium-12.5 has a half-life of 100 years. What's its decay rate?
10. Using your work from the previous problem, a very old sample of radioactive Wieligminium decayed from 14 grams to 5 grams. To the nearest *day*, how old is the sample?

11. Solve $(\log(x))^2 = \log(x^2)$ for x .

12. What's the future value of \$5,000 invested at 4% APR, if interest is compounded...

a. ... monthly?

b. ... daily?

c. ... continuously?