Honors Algebra 3-4	Honors	Algebra	3-4
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Chapter 3 Review Worksheet

Name	Key

Period

#1. Jill deposits \$5000 into an investment in which the interest is compounded continuously. The balance will double in 12 years. A=Port

(a) What is the annual percentage rate for this investment?

 $2f = f e^{r(R)} \qquad r = \frac{l_1 2}{12}$ $2 = e^{r(R)} \qquad f \qquad r = .05776...$ $l_{R2} = r(R) \qquad f_{R2} = \frac{l_1 2}{l_2 2}$

(b) Find the balance after 30 years.

#2. Evaluate $\log_b 18$, given that $\log_b 2 = 0.5298$ and $\log_b 3 = 0.8397$.

#3. Solve for x: $7^x = 9$

$$|09_{2}7^{2} = |09_{3}|^{2} | 1 \times = |11|^{2} = |11|^{2}$$

$$\times = |09_{3}|^{2}$$

$$\times = |09_{3}|^{2}$$

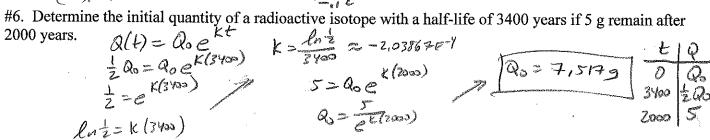
$$\times = |09_{3}|^{2}$$

$$\times = |09_{3}|^{2}$$

#3. Solve for
$$x$$
. $y = x = 1$, $y = 1$

#5. In a typing class, the average number of words per minute N typed after t weeks of school was found At what time, t (in weeks), did the class average typing speed equal 75 words

per minute?
$$157$$
 $75 = \frac{1}{1 + 5.14}e^{-1.12t}$
 $e^{-\frac{12t}{5.41/75}}$
 $e^{-\frac{12t}{5.41/$



#7. Evaluate the expression: $\log_m m^5$



#8. Solve for x: $\ln x = 2.5$

#9. Write in logarithmic form: $4^5 = 1024$

#10. Write in exponential form: $\ln a = 3$

#11. Write the expression as a single logarithm: $\ln 3 + \frac{1}{2} \ln (4 - x^2) - \ln x$

$$l_{n3} + l_{n}(4-x^{2})^{2} - l_{nx}$$

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$$l_{n3} + l_{n}(4-x^{2})^{2} - l_{nx}$$

#12. Write the expression as a sum, difference, and/or multiple of logarithms: $\log_7 \left(\frac{\sqrt{x}}{4} \right)$

#13. Use the change of base formula to evaluate the following to 4 decimal places: $\log_6 14 = \frac{\ln 14}{\ln 6}$

#14. Find the balance after 20 years if \$350 is invested in an account that pays 7.5% interest compounded monthly. L_{-72}

t=20

$$p=350$$
 $A=p(1+\frac{r}{n})^{nt}$
 $r=.075$
 $n=12$
 $A=350(1+\frac{.075}{12})^{2}(20)$

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Chapter 3 Review Worksheet

Name	
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- #1. Jill deposits \$5000 into an investment in which the interest is compounded continuously. The balance will double in 12 years.
 - (a) What is the annual percentage rate for this investment?
 - (b) Find the balance after 30 years.
- #2. Evaluate $\log_b 18$, given that $\log_b 2 = 0.5298$ and $\log_b 3 = 0.8397$.
- #3. Solve for x: $7^x = 9$
- #4. Solve for x: $\log(x+9) \log(x) = 2$

#5. In a typing class, the average number of words per minute N typed after t weeks of school was found to be: $N = \frac{157}{1 + 5.4e^{-0.12t}}$ At what time, t (in weeks), did the class average typing speed equal 75 words per minute?

#6. Determine the initial quantity of a radioactive isotope with a half-life of 3400 years if 5 g remain after 2000 years.

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- #11. Write the expression as a single logarithm: $\ln 3 + \frac{1}{2} \ln (4 x^2) \ln x$
- #12. Write the expression as a sum, difference, and/or multiple of logarithms: $\log_7 \left(\frac{\sqrt{x}}{4} \right)$
- #13. Use the change of base formula to evaluate the following to 4 decimal places: $\log_6 14$
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