Name _____
Date _____ **Day** _____

1. Johnny goes to the pet store and buys 5 pet gerbils. He takes them home and keeps them in his basement. The number of gerbils in Johnny's basement doubles every month. How many gerbils will be in his basement after 10 months?	2. Sally starts a chain email that requires each recipient to pass it on to four new people after 24 hours else they be cursed with a lifetime of bad-hair days. Sally sends the email to four of her friends. If everyone who gets the email obeys and sends it on to four people, how many people will receive the email on the tenth day after it started?
3. Two grey squirrels stow away on a freight ship heading for Greenland. When they arrive, they take to their new environment and begin to thrive. Their population grows at a rate of 55% per month. How many squirrels will there be after one and a half years?	4. A sheet of paper with an area of 100 square inches is folded in half 7 times. What is the area of the paper after the last fold?
5. Christina goes to the pet store and buys 4 pet gerbils. She takes them home and lets them live in her basement. The number of gerbils in Christina's basement triples every month. How many gerbils will be in her basement after 9 months?	6. A colony of bacteria doubles its population every hour. How long will it take a colony of 50,000 bacteria to grow to a population of 1 million?
7. The value of a computer network increases exponentially with number of computers connected to it. If the base value of a network is $10,000 and it increases by 0.2% for every computer, how much would it be worth with 3,000 computers connected?	8. Tamara starts a chain email that requires each recipient to pass it on to 2 new people after 24 hours else they be cursed with a lifetime of bad-hair days. Tamara sends the email to three of her friends. If everyone who gets the email obeys and sends it on to two people, how many people will receive the email on the 25^{th} day after it started?

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9. $e^x = 7$	10. $5^{2x} = 15$
11. $2e^x - 5 = 107$	12. $e^{2x} + 17 = 37$
13. $e^{2x} - 11e^x + 10 = 0$	14. $\ln\sqrt{x-2} = 9$
15. $\log_4(5x-19) = \log_4(3x+24)$	16. $-5 - 2\ln x = -17$
17. $2\log_5 6x = 15$	18. $\log_9 x - \log_9(x-1) = \frac{1}{2}$