

Exponential Growth - PRACTICE

1. Movie tickets now average \$9.75 a ticket, but are increasing 15% per year. How much will they cost 5 years from now?
2. During a certain period of time, about 70 northern sea otters had an annual growth rate of 18%. How many otters will there be in 4 years?
3. A 1970 comic book has appreciated 10% per year and originally sold for \$0.35. What will it be worth in 2010?
4. Annual sales for a fast food restaurant are \$650,000 and are increasing at a rate of 4% per year. What will the annual sales be in 5 years?
5. The population of a school is 800 students and is increasing at a rate of 2% per year. What will the population be in 6 years?

Write a compound interest function to model each situation. Then find the balance after the given number of years.

6. \$50,000 invested at a rate of 3% compounded monthly. What is the balance after 6 years?
7. \$43,000 invested at a rate of 5% compounded annually. What is the balance after 3 years?
8. \$65,000 invested at a rate of 6% compounded quarterly. What is the balance after 12 years?

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9. The population of a town can be found by the equation $f(x) = 7500(1.02)^x$ where x represents the years since 2000.
- What percent is the population of the town increasing by each year?
 - What is the population of the town in 2019?
 - What was the population in 2000?
10. The number of fish in a man-made lake can be found by the equation $f(x) = 85(1.2)^x$ where x represents years since the lake was created.
- What percent is the population of fish growing by each year?
 - What is the population of fish 5 years after the lake has been created?
11. Write an exponential function in the form of $y = ab^x$ from the values in the table.

x	y
-2	0.75
-1	1.5
0	3
1	6
2	12

12. Write an exponential function in the form of $y = ab^x$ from the values in the table.

X	Y1
-1	1
0	4
1	16
2	64
3	256
4	1024
5	4096
6	16384