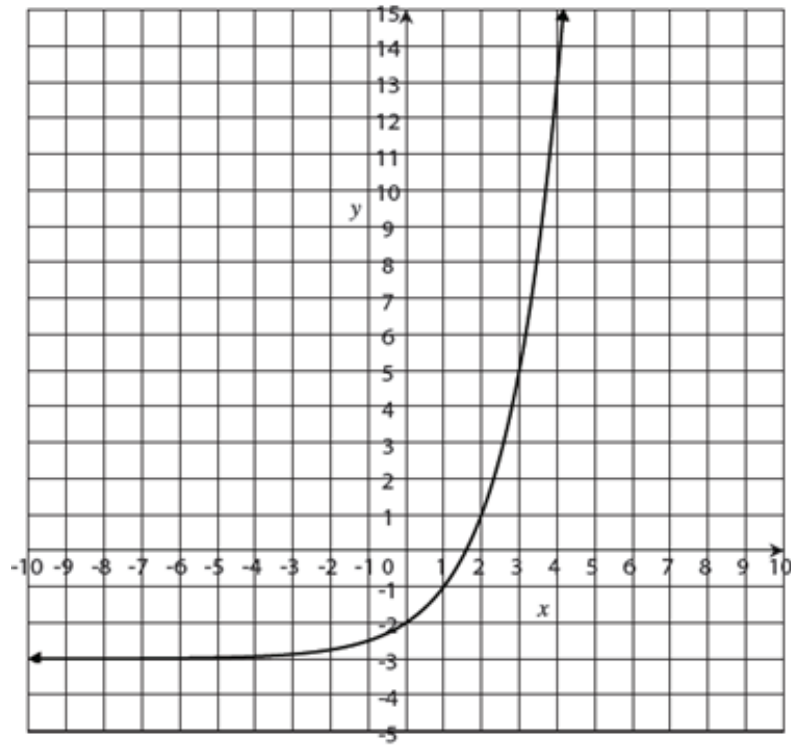
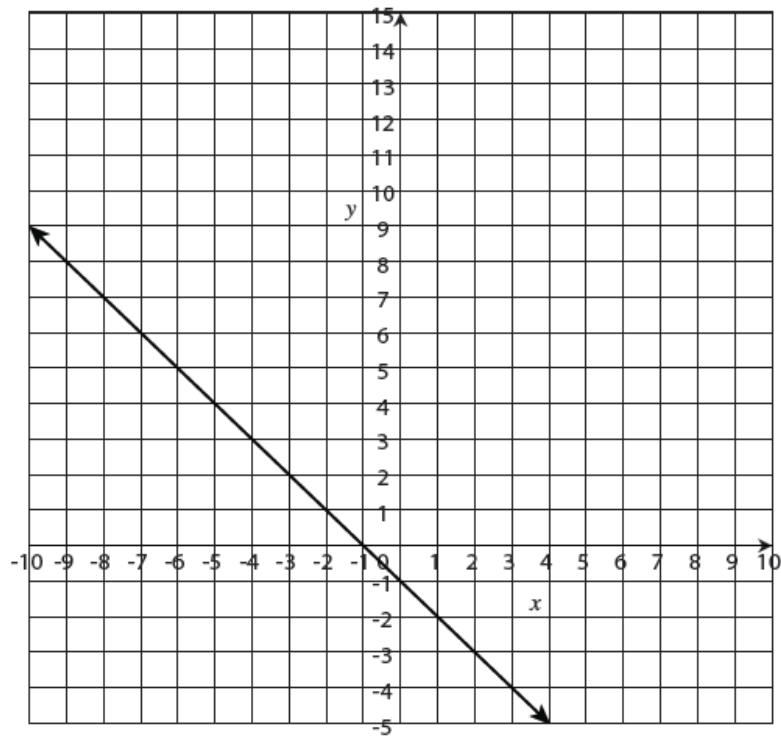


Graph the following functions of $f(x) + k$ given the graphs of $f(x)$.

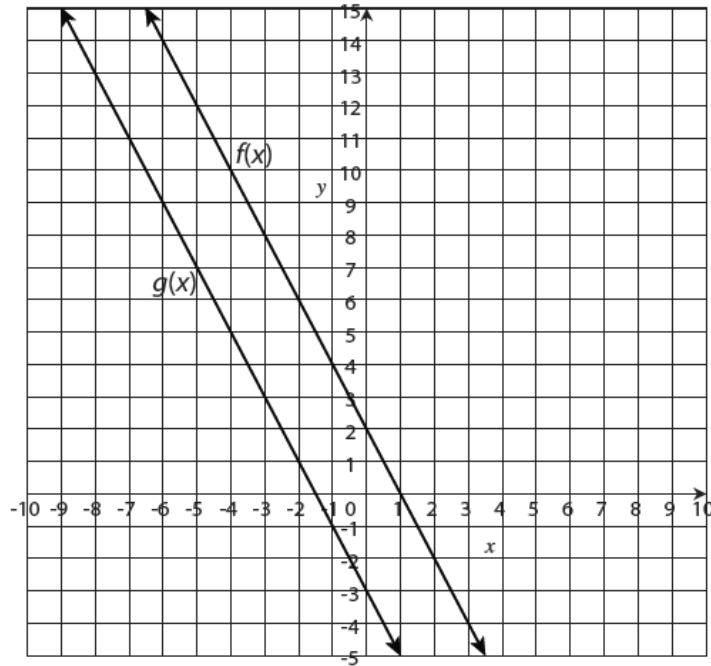
1. $f(x) + 2$



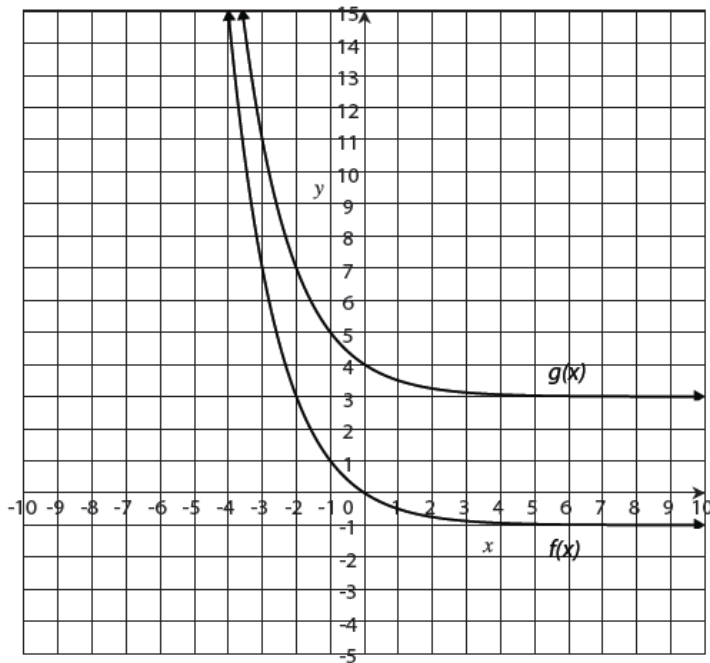
2. $f(x) - 3$



3. Given the graphs of $f(x)$ and $g(x)$ below, write a function rule for $g(x)$ in terms of $f(x)$.



4. Given the graphs of $f(x)$ and $g(x)$ below, write a function rule for $g(x)$ in terms of $f(x)$.



5. $f(x) = 2x + 1$ and $g(x) = 2x - 2$. If $g(x)$ can be written as $f(x) + k$, what is the value of k ?

6. $f(x) = 2^x - 1$ and $g(x) = 2^x + 3$. If $g(x)$ can be written as $f(x) + k$, what is the value of k ?

7-11 Write an Exponential Function as directed.

7. An unprotected population of deer is decreasing by 3% every year. A local community starts protecting their herd so the population remains constant. The unprotected herd has 500 deer in it. The community that protects them has 150 deer. Write an equation to calculate how many deer there will be in these populations combined in x years.
8. Paul invested \$400 into an account with a 5.5% interest rate compounded monthly. He also puts \$300 under a mattress.
- Write an equation to calculate Paul's savings will be worth in x years? Be sure the equation includes the money in the bank and under the mattress.
 - How much will he have in 15 years?
9. Leonardo purchases a car for \$18,995. The car depreciates at a rate of 6% every year, but it also has a \$500 stereo that will not lose value. .
- Write an equation to calculate how much the car and stereo will be worth in x years.
 - How much will the car be worth in 20 years?
10. Jason receives \$3,000 from his grandpa. He puts half of it in a piggy bank. He places the rest in an investment that gains 2% per year.
- Write an equation that will calculate how much money Jason will have from the \$3000 in x years.
 - How much will he have in 30 years?
11. Jenée invests \$200 money in a savings account that gains 2% interest compounded daily. She places another \$50 under a mattress.
- Write an equation that will calculate how much money she will have in x years. Be sure to include the money under the mattress as well as the savings account.
 - How much will Jenée have from her original \$250 in 50 years?