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UNIT 3 • LINEAR AND EXPONENTIAL FUNCTIONS

Lesson 3: Interpreting Graphs of Functions

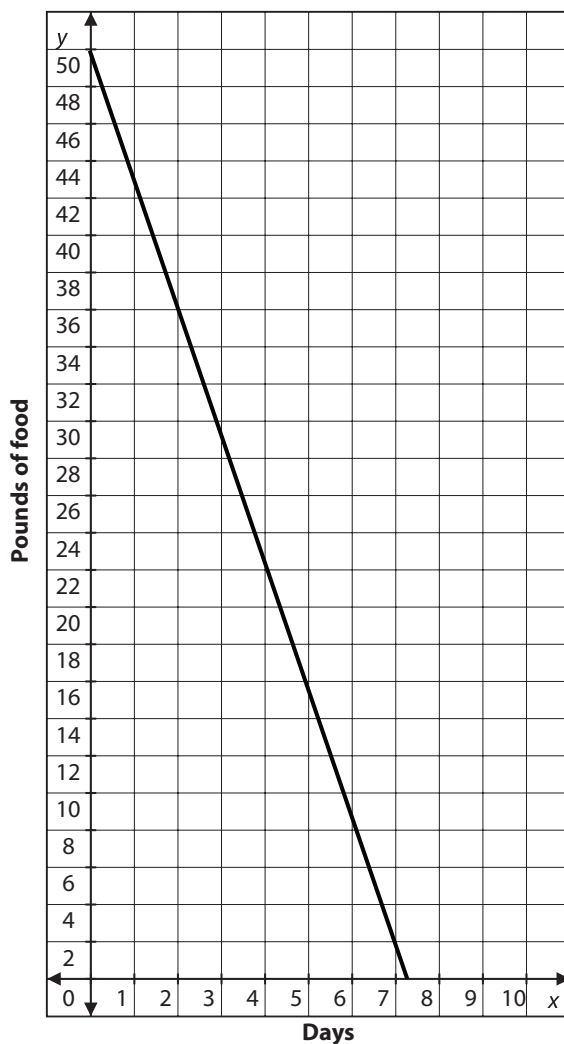
Practice 3.3.1: Identifying Key Features of Linear and Exponential Graphs

Determine the domain of each function, and then graph the function on graph paper.

1. Mikhail receives a base weekly salary of \$350 plus a commission of \$50 for each vacuum he sells. His weekly earnings can be modeled by the function $f(x) = 50x + 350$.
2. A population of insects begins with 15 insects and doubles every month. The population can be modeled by the function $f(x) = 15(2)^x$.

Determine the key features of each function. Include the x - and y -intercepts, whether the function is increasing or decreasing, whether it's negative or positive, the minimum and maximum, asymptotes, and domain. Find the asymptotes as if the domain were all real numbers.

3. You and your friends are out hiking. You start the hike with 50 pounds of food for the group, and eat about 7 pounds each day. Identify the key features of the graph of this function.



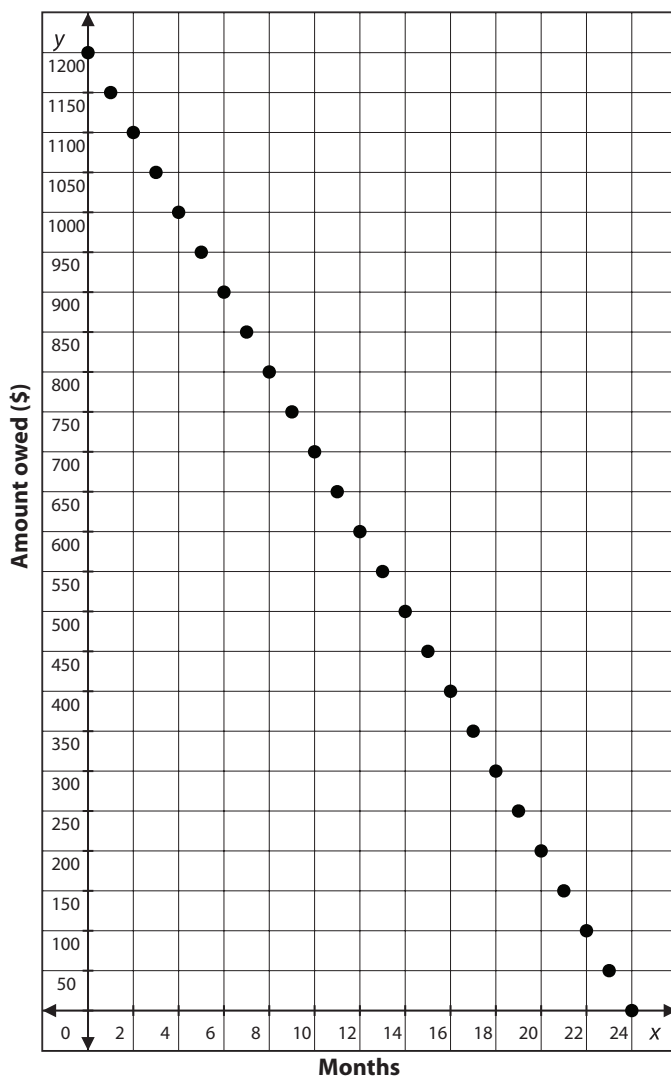
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4. Mason borrowed \$1,200 from a friend to buy a new hot tub. His friend doesn't charge any interest and Mason makes \$50 payments each month. Identify the key features of the graph of this function.



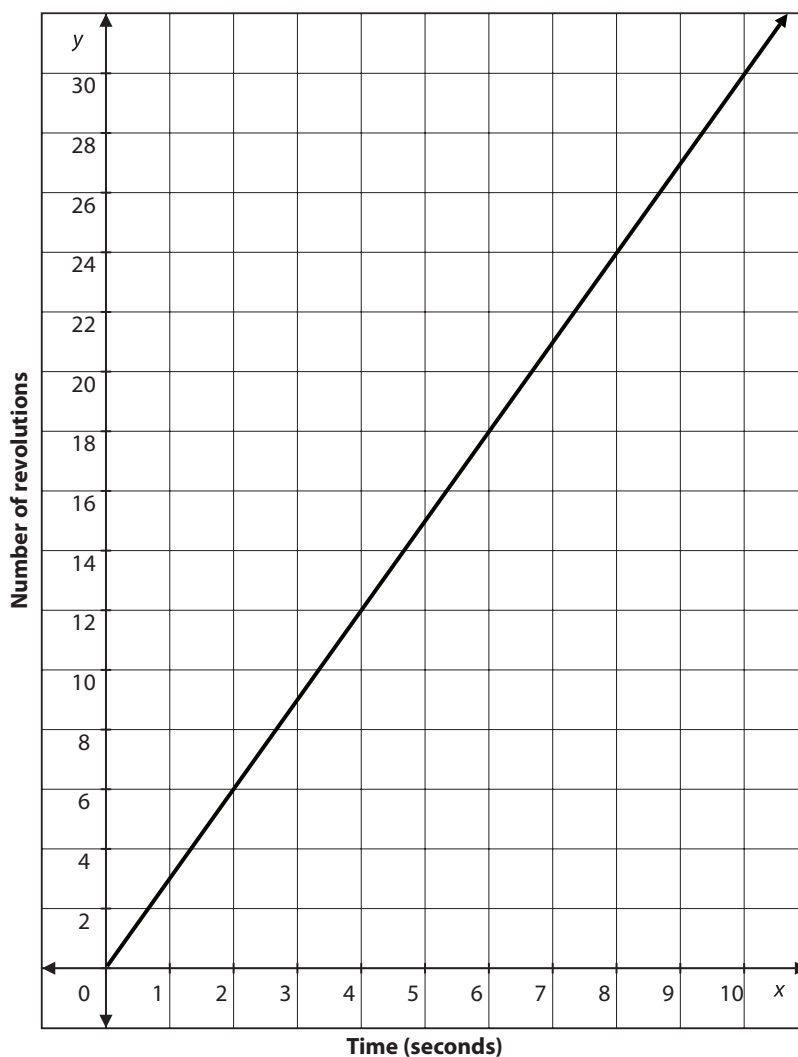
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5. A gear on a machine turns at a rate of 3 revolutions per second. Identify the key features of the graph of this function.



6. The cost of an air conditioner is \$110. The cost to run the air conditioner is \$0.35 per minute. Identify the key features of this function.

Minutes (x)	Cost in dollars ($f(x)$)
0	110.00
30	120.50
60	131.00
90	141.50
120	152.00

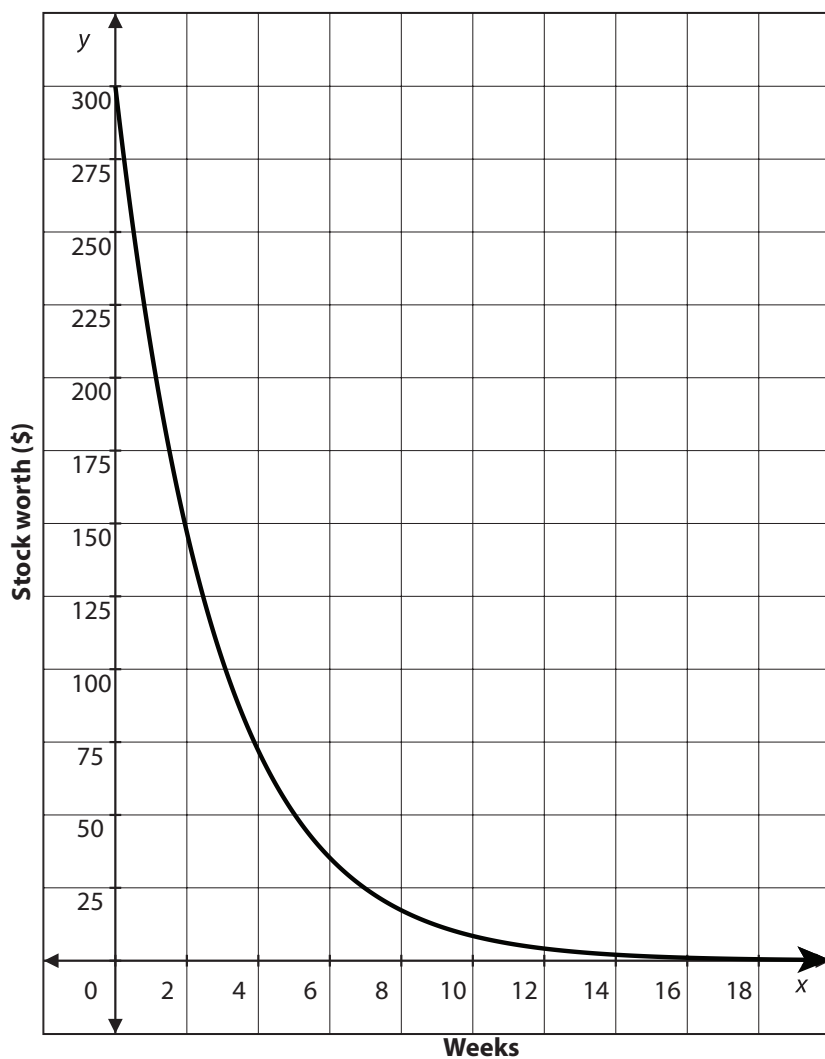
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7. A stock is declining at a rate of 70% of its value every 2 weeks. The stock started at \$300. Identify the key features of the graph of this function.



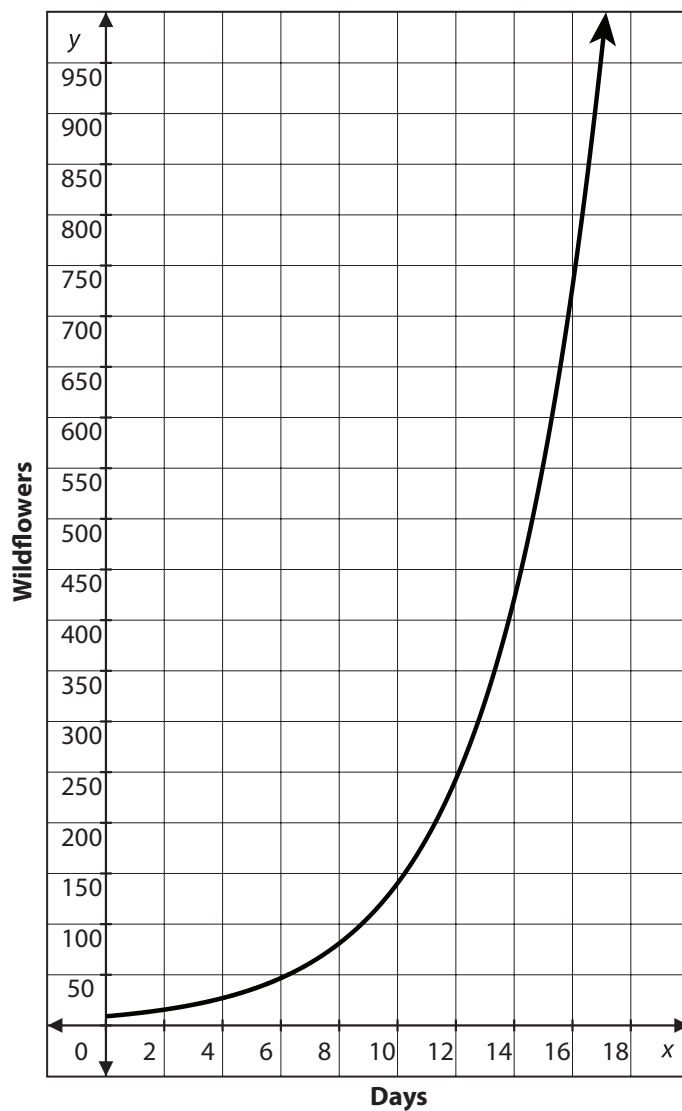
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8. A wildflower species triples in 4 days. A field started with 9 wildflowers in the early spring. Identify the key features of the graph of this function.



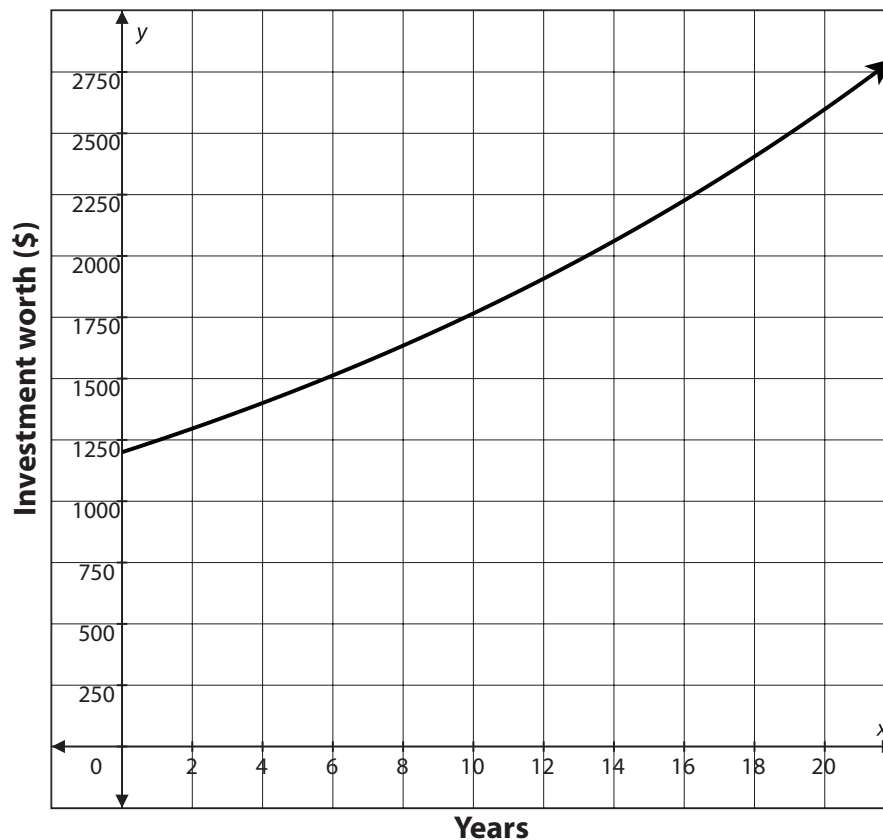
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9. An investment of \$1,200 earns 3.9% interest and is compounded semi-annually. Identify the key features of the graph of this function.



10. An investment of \$3,000 earns 1.5% interest and is compounded weekly. Identify the key features of this function.

Year (x)	Investment value in dollars ($f(x)$)
0	3000
1	3045.58
2	3091.84
3	3138.82
4	3186.50
5	3234.91
6	3281.06