

Modeling: Problems

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1. Sue has 15 friends. Every week she makes 4 more friends. Is this linear or exponential? How many friends will she have in 3 weeks? Give a formula that will tell me how many friends she will have in w weeks. Graph this formula for $w = 0$ to $w = 10$. How long will it take for her to have 43 friends?
2. Joe has 12 friends. Every week the number of friends he has increases by 26.6%. Is this linear or exponential? How many friends will he have in 3 weeks? Give a formula that will tell me how many friends he will have in w weeks. Graph this formula for $w = 0$ to $w = 10$.
3. Is simple interest an example of linear or exponential growth?
4. Is compounding interest an example of linear or exponential growth?