



CONNECTED

Do social networks make us more connected?

name _____

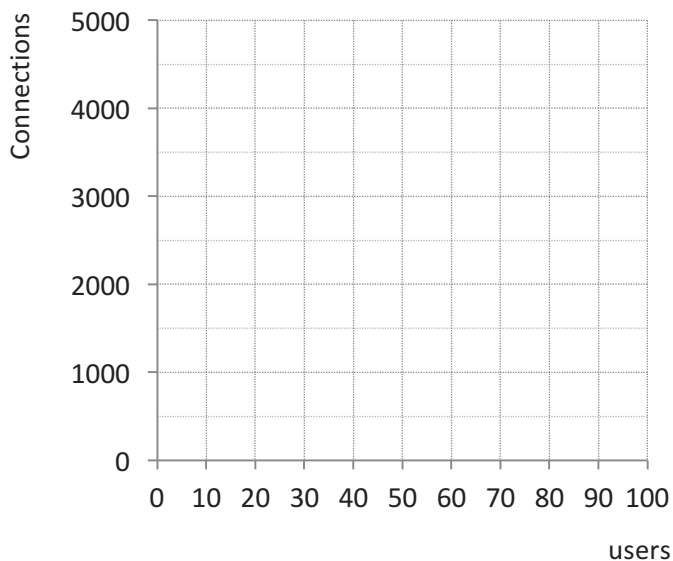
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Act One: Strength in Numbers

- 1 Networks like telephone systems, Skype, Facebook, etc., depend on having lots of users; the more users there are, the more vibrant the network can be. The diagram below shows a network as it grows from one user to six. For each step, determine the **total number of possible connections** that can be made between users.

Users	1	2	3	4	5	6
Connections						

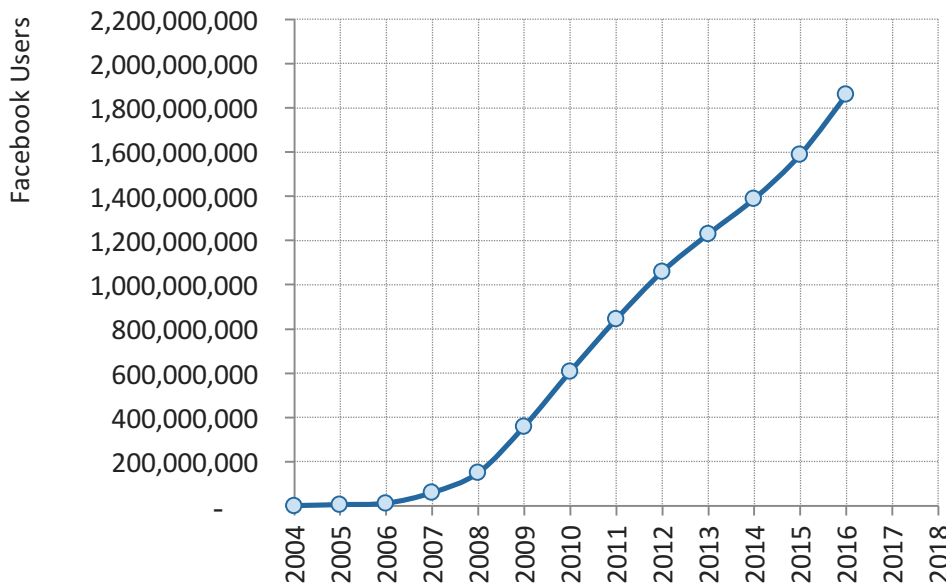
- 2 Without drawing anything, explain how you could determine the total number of connections in a network with ten users. Based on this, how many connections are possible in a network with 20 users? With 100 users?
- 3 Write an equation for the number of possible connections for u users, and graph it below. As the network grows, how does the number of additional connections change, and how might this affect the user experience?





Act Two: Strength in Numbers?

- 4 In 2004, Mark Zuckerberg launched Facebook from his dorm room at Harvard. Today, approximately one in four humans uses it each month. The following graph shows how the number of Facebook users has grown over time.



Year (end)	Users
2004	1 million
2005	5.5 million
2006	12 million
2007	60 million
2008	150 million
2009	360 million
2010	608 million
2011	845 million
2012	1.06 billion
2013	1.23 billion
2014	1.39 billion
2015	1.59 billion
2016	1.86 billion

a. How has the number of connections changed between when you first heard of Facebook and now, and what might be some upsides of this?

b. How do you expect the number of actual connections on Facebook compares to the number of possible connections? Explain.

- 5 For many users, Facebook is the main source of news and information. Some people think it exposes us to new and diverse ideas. Others think it's an "echo chamber" where we only hear perspectives we already agree with. In your experience, is Facebook causing us to become more or less open-minded, and how well do you think it's meeting its goal of "bringing the world closer together?"