
5.5 Averages and Probability

The average teenager tweets 22 times per day.

Does this mean every teenager tweets 22 times per day? No, some teenagers don't tweet at all while some teenagers tweet 100's of times per day.

Then what does it mean that the average teen tweets 22 times per day? It means that in a randomly chosen sample of teenagers, the average (mean) number of daily tweets is 22. For example, suppose that 30 high school teens were surveyed regarding how many times they tweet each day and the following data was recorded:

12	12	14	16	17	18	18	18	19	19
20	20	20	20	21	21	21	21	22	22
22	22	23	24	26	27	32	32	36	45

If we add the data values together and divide the sum by 30, we get 22. Thus, even though very few teens actually tweeted exactly 22 times per day, the number 22 is representative as a central number of the group as a whole.

<i>Demonstration Problems</i>	<i>Practice Problems</i>
Calculate the mean of the following set of numbers: 1. (a) 8, 9, 7, 12, 10, 5	Calculate the mean of the following set of numbers: 1. (b) 8, 12, 15, 9, 6
Answers: 1. (b) 10	

<i>Demonstration Problems</i>	<i>Practice Problems</i>
Find the median of each set of numbers: 2. (a) 43, 38, 51, 40, 46	Find the median of each set of numbers: 2. (b) 8, 9, 7, 12, 10, 5
3. (a) 21, 25, 19, 17, 22, 18, 20, 24	3. (b) 83, 79, 85, 86, 92, 100, 76, 90, 88, 64
Answers: 2. (b) 13; 3. (b) 85.5	

<i>Demonstration Problems</i>	<i>Practice Problems</i>
<p>Find the probability of the following events:</p> <p>6. (a) A bowl of candy contains 5 chocolates and 10 jellies. What is the probability that a jelly will be chosen at random?</p> <p>7. (a) A box contains 15 vanilla maple yogurts and 20 black cherry yogurts. What is the probability that a vanilla maple yogurt will be chosen at random?</p>	<p>Find the probability of the following events:</p> <p>6. (b) A tray of cookies contains 8 chocolate chip cookies and 12 sugar cookies. What is the probability that a chocolate chip cookie will be chosen at random?</p> <p>7. (b) A box contains 24 chargers for an iPhone 7 and 24 chargers for a Samsung Galaxy S6. What is the probability that a charger for an iPhone 7 will be chosen at random?</p>
<p>Answers: 6. (b) $\frac{2}{3}$; 7. (b) $\frac{1}{2}$</p>	