



Try these problems before watching the lesson.

1. Buzz randomly chooses a positive integer between 0.5 and 10.5. What is the probability that Buzz's number is closer to 10 than it is to 1?
2. Tina randomly chooses a positive integer between 0.5 and 9.5. What is the probability that Tina's number is closer to 9 than it is to 1?
3. Ari randomly chooses a number on the number line between 0 and 1. What is the probability that Ari's number is closer to 1 than it is to 0?
4. Polly randomly chooses a number on the number line between 0 and 1. What is the probability that Polly's number is closer to 0.8 than it is to 0.5?
5. A point is chosen at random inside a square with side length 10 inches. What is the probability that the point is within 1 inch of the center of the square? Answer as a decimal rounded to the nearest thousandth.



Two numbers between 0 and 1 on a number line are to be chosen at random. What is the probability that the second number chosen will exceed the first number chosen by a distance greater than $\frac{1}{4}$ unit on the number line? Express your answer as a common fraction.

 → *Follow-up Problems*

6. Shannon breaks a straight stick into two pieces at a randomly chosen point. What is the probability that the longer piece is more than twice as long as the shorter piece?
7. Larry randomly chooses a point on a table and places a circular coin on the table so that the center of the coin is directly on his point. If the radius of the coin is 1 inch and the tabletop is a square with side length 15 inches, then what is the probability that the entire coin is on the table (that is, none of the coin hangs off the edge)?
8. Two numbers, x and y , are chosen at random such that each is between 0 and 1. What is the probability that their sum is greater than $\frac{3}{2}$?
9. What is the probability that Richard is in trouble?

 *Further Exploration*

You can use geometric probability to approximate π with an experiment! This is sometimes referred to as Buffon's Needle Problem. You can read about the experiment at

<http://www.worsleyschool.net/science/files/buffon/buffon2.html>

And you can run the experiment yourself online at

<http://mste.illinois.edu/reese/buffon/bufjava.html>

 *Share Your Thoughts*

Have some thoughts about the video? Want to discuss the problems on the Activity Sheet? Visit the MATHCOUNTS Facebook page or the Art of Problem Solving Online Community (www.artofproblemsolving.com).