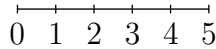


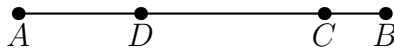


Try these problems before watching the lesson.

1. A point is selected at random from the interval $-10 \leq x \leq 10$. What is the probability that the coordinate of the point is a solution of $x \geq 7$? Express your answer as a common fraction.
2. A point is selected at random from the portion of the number line shown here. What is the probability that the point is closer to 4 than to 0? Express your answer as a decimal to the nearest tenth.



3. Points A , B , C , and D are located on \overline{AB} such that $AB = 3AD = 6BC$. If a point is selected at random on \overline{AB} , what is the probability that it is between C and D ? Express your answer as a common fraction.




4. Suppose \overline{AB} , \overline{AC} , and \overline{AD} are edges of a cube that has side length 6 cm. What is the volume of tetrahedron $ABCD$?



What is the probability that three randomly drawn real numbers between 0 and 1 have a sum less than 1? Express your answer as a common fraction.

 Follow-up Problems

5. A point (x, y) is randomly selected such that $0 \leq x \leq 8$ and $0 \leq y \leq 4$. What is the probability that $x + y \leq 4$? Express your answer as a common fraction.
6. Given that a and b are real numbers such that $-3 \leq a \leq 1$ and $-2 \leq b \leq 4$, and values for a and b are chosen at random, what is the probability that the product $a \cdot b$ is positive? Express your answer as a common fraction.
7. 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.
8. A point E is chosen at random from within the square $ABCD$. Express as a decimal to the nearest hundredth the probability that $\triangle ABE$ is obtuse.

 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).