FORMULAS AND STORIES: FORMULA CARDS

$D = R \cdot T$	$A = \pi r^2$	$mean = \dfrac{sum}{\#\ of\ values}$
${}_nC_r = \dfrac{n!}{(n-r)! \cdot r!}$	${}_nP_r = \dfrac{n!}{(n-r)!}$	$V = B \cdot h$

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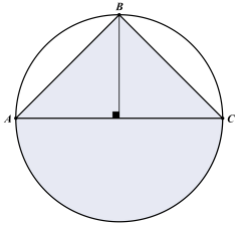
Mateo started his bike ride earlier than Amelia. During the first 30 minutes of Amelia's ride, Mateo was traveling at a constant speed equal to ½ of Amelia's maximum speed of 20 miles per hour during that same time period. How far, in miles, did Mateo travel during the first half-hour of Amelia's ride.	The average weight of 8 cats is 9.3 pounds. If the smallest cat is excluded, the average weight of the 7 remaining cats is 9.5 pounds. What is the weight of the smallest cat?	The names of the 5 players on the starting lineup will be read aloud. If there are 15 players to select from, how many different ways can the starting lineup be introduced to the crowd?
 In the circle shown above, $\overline{AC}$ is the diameter. The radius of the circle is 3 inches. What is the area of the shaded region?	A starting lineup of 5 players will be selected from a team of 15 players. How many different starting lineups could be created?	The bottom of a violin case, shown below, has an area of 240 square inches and a perimeter of 80 inches. The case has a uniform depth of 7 inches. What is the volume of the violin case?