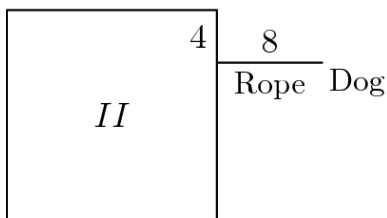
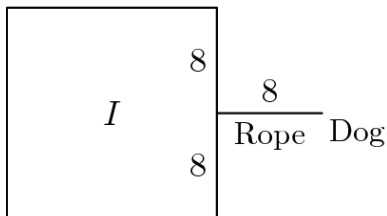
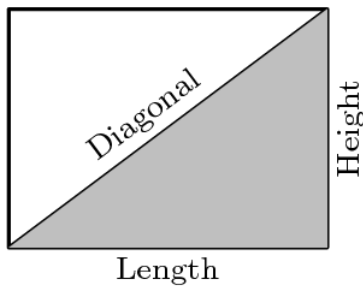


Denver Math Club

October 2018

Geometry Handout

Many television screens are rectangles that are measured by the length of their diagonals. The ratio of the horizontal length to the height in a standard television screen is $4 : 3$. In inches, what is the horizontal length of a "27-inch" television screen? Express your answer as a decimal.

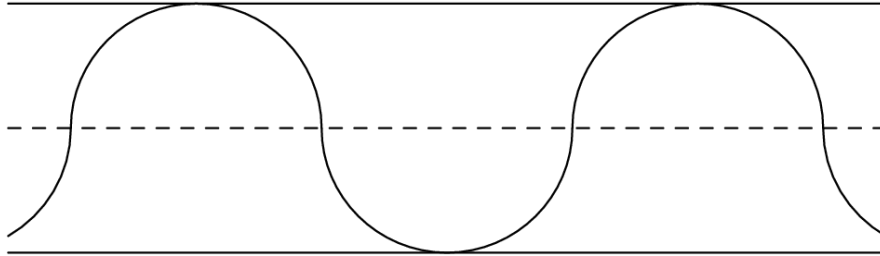


Rolly wishes to secure his dog with an 8-foot rope to a square shed that is 16 feet on each side. His preliminary drawings are shown.

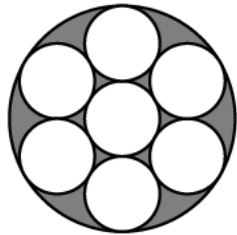
Which of these arrangements give the dog the greater area to roam, and by how many square feet?

A straight one-mile stretch of highway, 40 feet wide, is closed. Robert rides his bike on a path composed of semicircles as shown. If he rides at 5 miles per hour, how many hours will it take to cover the one-mile stretch?

Note: 1 mile = 5280 feet



Each of the small circles in the figure has radius one. The innermost circle is tangent to the six circles that surround it, and each of those circles is tangent to the large circle and to its small-circle neighbors. Find the area of the shaded region.



In rectangle $ABCD$, $AD = 1$, P is on \overline{AB} , and \overline{DB} and \overline{DP} trisect $\angle ADC$. What is the perimeter of $\triangle BDP$?

