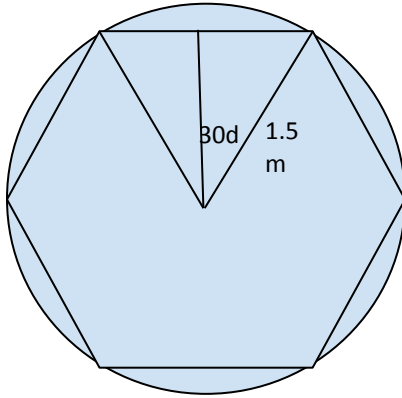


December 2017 High School Monthly Math Challenge Solution

1 - solution



Perimeter = [radius] [sin of right angle geom to get the half side length] [twice the number of sides]

$$\text{Perimeter} = [(3.00/2)][(\sin(360/2*6))][(6)(2)] = \underline{9.00 \text{ m}}$$

$$\text{Area} = A = \frac{3\sqrt{3}}{2} a^2 \quad \text{where } a=1.5\text{m: } A = \underline{5.85\text{m}^2}$$

2 -solution

$$\text{Perimeter} = \frac{d}{2} * \sin\left(\frac{360}{2n}\right) * 2n = n * d \sin\left(\frac{360}{2n}\right)$$