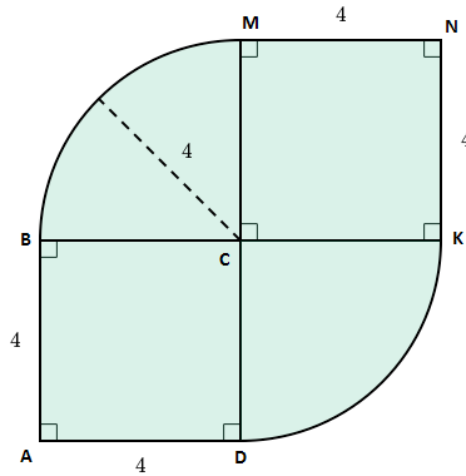


Answer on Question #54831 - Math – Geometry

Find the perimeter of the figure.



Solution

The figure consists of two squares and two quarters of circle. The perimeter equals $P = AB + \overset{\frown}{BM} + MN + NK + \overset{\frown}{KD} + DA$.

It is given that $AB = MN = NK = AD = 4$

Arcs $\overset{\frown}{BM}, \overset{\frown}{KD}$ are equal, because they have the same radius $R = 4$ ($R = MC = CK$) and subtend equal angles 90° .

$$\text{So } \overset{\frown}{BM} = \overset{\frown}{KD} = \frac{1}{4} * 2\pi R = \frac{\pi R}{2} = 2\pi.$$

$$\text{Finally } P = 4 + 2\pi + 4 + 4 + 2\pi + 4 = 16 + 4\pi.$$

Answer: $P = 16 + 4\pi$.