Achievable

Glossary of geometry formulas and theorems

AMC 10/12 DUMP SHEET

Area of triangle equations

- $\text{Area} = \dfrac{(\text{Base x Height})}{2}$
- $\text{Area} = \dfrac{1}{2}\,[x_1(y_2 - y_3) + x_2\,(y_3 - y_1) + x_1(y_1 - y_2)]$

  where (x_1,y_1), $(x_2\,,\,y_2)$, and (x_3,y_3) are the coordinate pairs of the three vertices

- $\text{Area} = \sqrt{s\,(s-a)\,(s-b)\,(s-c)}$

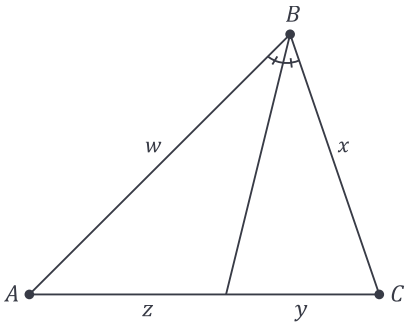
  where $s = \dfrac{a+b+c}{2}$ and a, b, c are the lengths of the triangle's sides

Pythagorean Theorem

- $a^2+b^2=c^2$

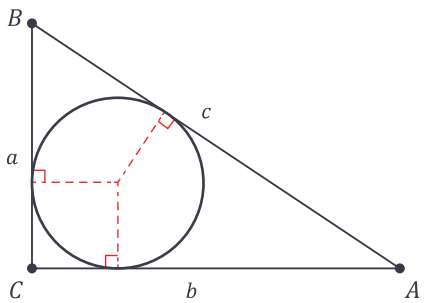
Angle Bisector Theorem

- $\dfrac{w}{z} = \dfrac{x}{y}$



Inradius of a right triangle

- $r = \dfrac{1}{2}\,(a+b-c)$



Inradius of a right triangle

- Area = $\pi(r)^2$
- Circumference = $2\pi r$ = $d\pi$