Achievable

Glossary of geometry formulas and theorems

AMC 10/12 DUMP SHEET

Equations for 3d shapes

3d Shape	Volume	Surface Area
cube	s^3	$6s^2$
cuboid	lwh	2lw+2wh+2lh
cylinder	$\pi r^2 h$	$2\pi r^2+2\pi rh$
Cone	$1/3\ \pi r^2 h$	$\pi r^2 + \pi rl$
Sphere	$^4/_3\ \pi r^3$	$4\pi r^2$
square pyramid	$1/3\ s^2 h$	$s^2 + 2sl$

Equation for a line

$y = mx + b$
m= slope

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

y-interscept = b

Distance and midpoint between two points

$$\text{Distance} = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

$$\text{Midpoint} = \left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2}\right)$$

Pick's Theorem

Area = I + B/2 - 1
I = # of lattice points in the shape
B = # of lattice points on the boundary of the shape