

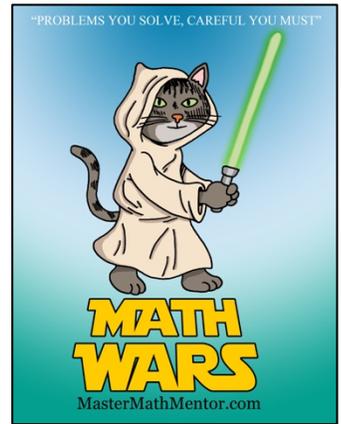
# Math Wars – SAT/ACT

## Topic 517 – Geometry Formulas/Shapes



Maximum Time: 7.75 Minutes

**Directions:** To start, you need to download the Math Wars application on your cell phone: Use the QR code or the url: <https://mastermathmentor.com/mmm/mathwars.ashx?key=517>



When ready, start the timer and then solve the problems below, entering your choice, A, B, C, D and pressing  for each problem when you are sure of your answer. When complete, stop the timer. You will see problems you got correct in green and incorrect in red. You will receive a score based on how many problems you got right and your time. A perfect score is all problems correct using half the maximum time or less. You can text or email your friends with your results.

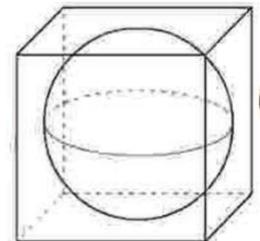
- (1 pt) A cube has an edge of 6. What is the sum of the faces, vertices, and edges of the cube?
 

A. 22                                      B. 26                                      C. 18                                      D. 20
- (3 pts) A cone has a volume of  $V = \frac{\pi r^2 h}{3}$ . If the radius of the cone is doubled and the height is halved, what is the effect on the new volume?
 

A. Tripled                                      B. Squared                                      C. Doubled                                      D. Remains the same

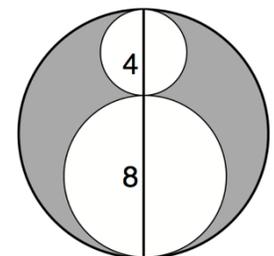
- (5 pts) The figure to the right is a sphere with radius 3 perfectly inscribed in a cube. Find the volume of the space between the sphere and the cube to the nearest integer.

- A. 113                                      B. 103  
C. 131                                      D. 178



- (7 pts) The figure to the right shows two circles with diameter 4 and 8 respectively, both tangent to a larger circle. Find the shaded area.

- A.  $16\pi$                                       B.  $20\pi$   
C.  $36\pi$                                       D.  $64\pi$



- (9 pts) In the figure to the right, a circle is inscribed in right triangle ABC. If  $BC = 6$  and  $AC = 8$ , find the circumference of the circle.

- A.  $2\pi$                                       B.  $\pi$   
C.  $9\pi$                                       D.  $4\pi$

