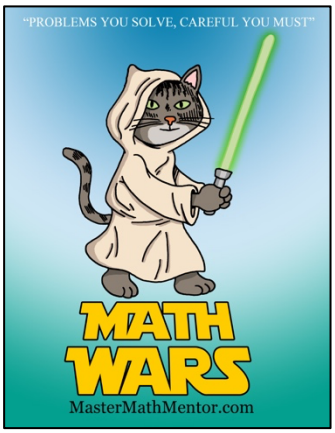
Math Wars – SAT/ACT
Topic 516 – Angles, Lines, Circles

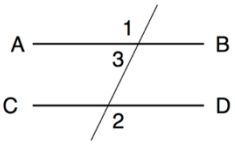


Maximum Time: 7 Minutes

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=516

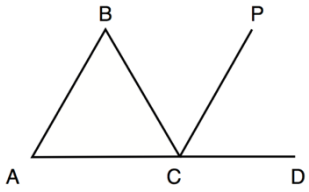
When ready, start the timer and then solve the problems below, entering your choice, A, B, C, D and pressing Submit for each problem when you are sure of your answer. When complete, stop the timer. You will see problems you got correct in green and incorrect in red. You will receive a score based on 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. (1 pt),Given the figure to the right with $AB \parallel CD$ and $\angle 1 = 115°$, find $\angle 2 + \angle 3$.



A. 190° B. 230° C. 180° D. 170°

2. (3 pts) In the figure to the right, $AB \parallel CP$, $AB = AC$. $\angle PCD = 80°$. Find the value of $\angle BCA$.



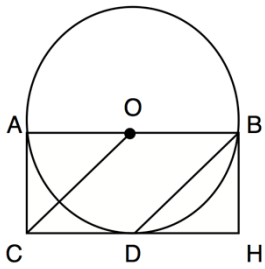
A. 50° B. 80°
C. 100° D. 75°

3. (5 pts) Given triangle ABC and triangle DEF, which of the following set of conditions is sufficient for the triangles to be congruent?

	$AB = DE$		$AB = DE$		$\angle A = \angle D$
I.	$BC = EF$	II.	$BC = EF$	III.	$\angle B = \angle E$
	$\angle A = \angle D$		$AC = DF$		$BC = EF$

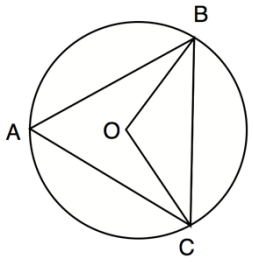
A. I only B. II only C. II and III only D. I, II, III only

4. (7 pts) Given circle O and rectangle ABHC shown in the figure to the right. The circumference of the circle is 16π. AO = AC and $CO \parallel BD$. Find the area of the parallelogram COBD.



A. 16 B. $16\sqrt{2}$
C. 64 D. $64\sqrt{2}$

5. (9 pts) In Circle O with radius 10 in the figure to the right, $\overset{\frown}{AB} = \overset{\frown}{BC} = \overset{\frown}{AC}$. Find the length of BC.



A. $\frac{10\sqrt{3}}{3}$

B. $5\sqrt{3}$

C. 10

D. $10\sqrt{3}$