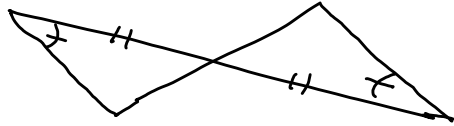


DC Fellows Math Immersion
Geometry & Trig Exercises.

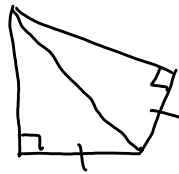
1.



ARE THESE TWO TRIANGLES CONGRUENT?
HOW DO YOU KNOW?

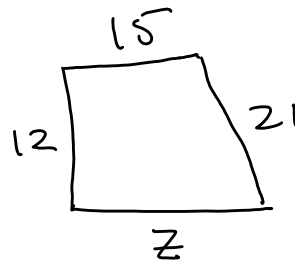
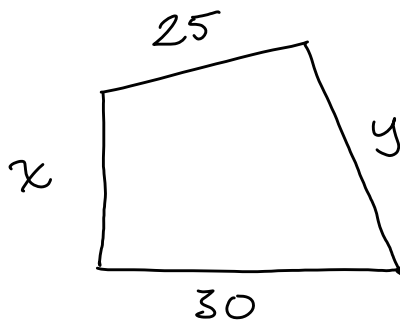
2.

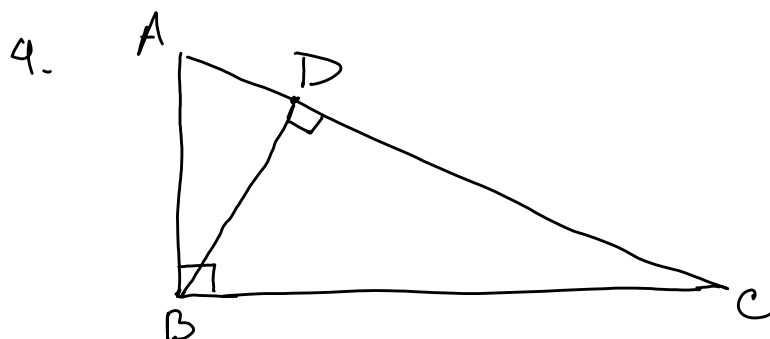
WHAT ABOUT THESE?



3.

GIVEN THAT THE QUADRILATERALS BELOW
ARE SIMILAR, FIND x , y , AND z .





$$AB = 6$$

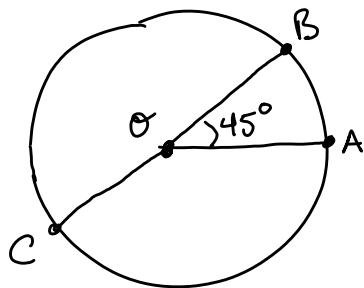
$$AC = 12$$

FIND AD , CD , BD , AND BC .

FIND THE ANGLES $\angle A$, $\angle C$, $\angle ABD$, AND $\angle DBC$.

5. A TRIANGLE HAS SIDES OF LENGTHS 7, 12, AND 14. IS IT ACUTE, OBTUSE, OR RIGHT?

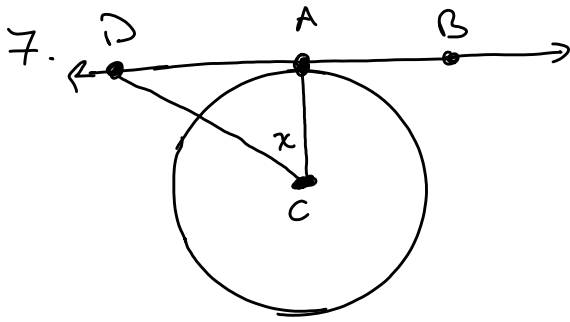
6.



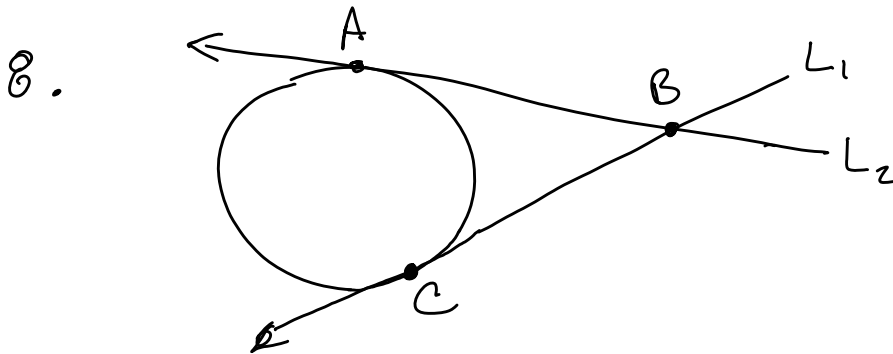
THE DIAMETER OF THE CIRCLE IS 3. WHAT IS THE LENGTH OF THE ARC AB ? AC ?

WHAT IS THE AREA OF THE SECTOR AOB ?

WHAT IS THE RATIO OF THE AREA OF SECTOR AOC TO THAT OF THE ENTIRE CIRCLE?



$\overline{DB}$ IS TANGENT TO THE CIRCLE, WHICH HAS RADIUS 3. $|\overline{AB}| = 4$.
FIND x .



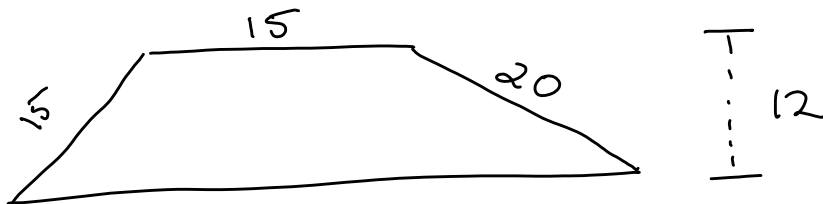
L_1 AND L_2 ARE TANGENT.

length of $\overline{AB}$ is $x^2 + x - 2$.

length of $\overline{CB}$ is $x^2 - 3x + 5$.

FIND THE LENGTHS OF $\overline{AB}$ AND $\overline{CB}$.

9. FIND THE AREA:



*ASSUME THE TOP AND BASE ARE PARALLEL.