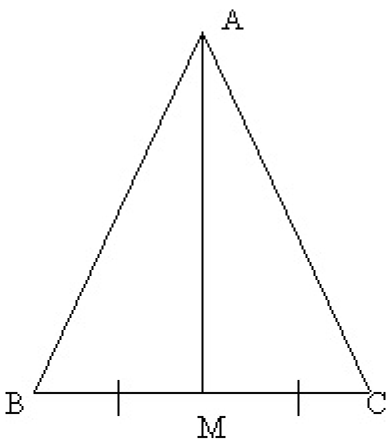
MATH 5: CLASSWORK 18,

March 9, 2025

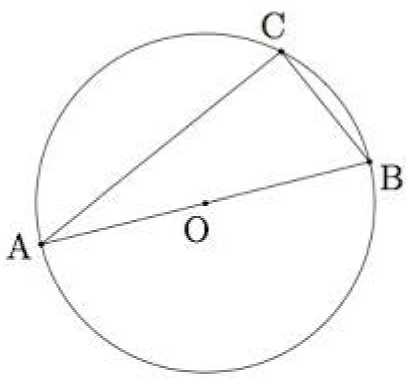


Recall that the triangle ***Δ*** ABC is called isosceles if AB = BC.

Theorems:

1. In an isosceles triangle, base angles are equal: ∠A = ∠C.

2. In an isosceles triangle, let M be the midpoint of the base AC. Then line BM is also the bisector of angle B and the altitude: BM is perpendicular to AC.



∀ ∠ ACB , where AB is a diameter,

Theorem:

∠ ACB =90º

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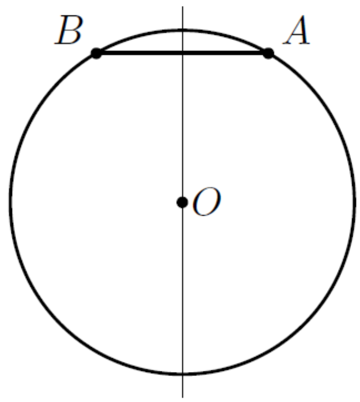
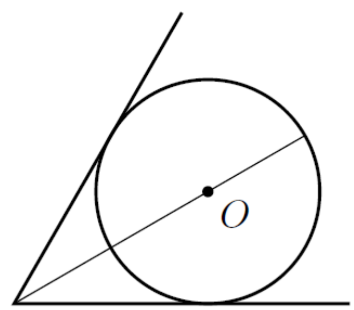
1. Prove that If two points A, B are on a circle, then the center of this circle lies on perpendicular bisector to AB (i.e., a line that goes through the midpoint of AB and is perpendicular to AB).



2. Given an angle AOB, construct the angle bisector (i.e., a ray OM such that ∠AOM ∠BOM)



3. Construct an isosceles triangle, given a base b=8 and altitude h=7.

4. Construct a right triangle, given a hypotenuse h=5 and one of the legs a=4.

5. Open parenthesis, simplify:

   a. $(x-a)(x+a) = x(x+a) - a(x+a) =$

   b. $(a+b)(a+b) =$

   c. $(a-b)(a-b) =$

6. Simplify

a) $\frac{55^4}{11^2 \cdot 5^2 \cdot 5^3} =$ b) $\frac{6^5 \cdot 2^4}{3^5 \cdot 2^{12}} =$ c) $\frac{x^3 \cdot y^{-2} \cdot x^{-3}}{x^2} =$