Inversion-I.

It is required to solve 2 problems to pass the task.

Problem 1. Given a circle ω with center O and arbitrary point A construct the image of point A under inversion with respect to ω with $a)$ ruler and compass; $b)$ compass only.

Problem 2. Prove that for any two circles ω_1 and ω_2 there exists inversion taking them to $a)$ equal circles; $b)$ to concentric circles, if they do not intersect.

Problem 3. Given a point A and two circles ω_1 and ω_2 construct a circle ω passing through A and tangent to ω_1 and ω_2. How many solution does this problem have?

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