Analytical Geometry and Linear Algebra I, HW #6

Innopolis University, October 2022

1. Find the equation of the straight line cutting off the intercepts 2 and -5 on the axes.
2. Find the equation of the straight line passing through the points $(7, 3)$ and cutting off equal intercepts on the axes.
3. Find the equation of the straight line of the portion of which between the axes is divided by the point $(4, 3)$ in the ratio 2:3.
4. Find the equations to the straight lines each of which passes through the point $(3, 2)$ and intersect the x and y axes at A and B such that $OA - OB = 2$.
5. Prove that the triangle whose vertices are $(2, 5)$, $(3, 4)$, and $(7, 10)$ is a right angled isosceles triangle. Find the equation of the hypotenuse.
6. Find the equation of the straight line passing through the intersection of the lines $7x + 3y = 7$ and $2x + y = 2$ and cutting off equal intercepts on the axes.
7. Find the equation of the perpendicular bisector of the line joining the points $(2, 6)$ and $(4, 6)$.
8. Find the equation of the line through the intersection of $2x + y = 8$ and $3x + 7 = 2y$ and parallel to $4x + y = 11$.