

Lines

Ex 1.

Write the equation of the line passing through points $P(1,2)$ and $Q(3, -1)$ in slope-intercept form and general form.

Ex 2.

Find the parametric equation of the line perpendicular to the line from Ex 1 and passing through point $R(0,1)$.

Ex 3.

A line passes through point $A(1, 2)$ and is parallel to the line $y = 2x + 3$. Find the equation of this line.

Ex 4.

For lines in general form $l_1 : 2x - 3y + 1 = 0$ and $l_2 : 4x - 6y - 5 = 0$, determine whether they are parallel, perpendicular, or intersect at a single point. If they have a common point, calculate its coordinates.

Ex 5.

Calculate the angle between the line $y = x + 3$ and the Ox axis.

Ex 6.

Provide a vector perpendicular to the line $x + y + 1 = 0$.

Ex 7.

* Find the distance of point $S(2,3)$ from the line $l : 3x - 4y + 5 = 0$.

Ex 8.

* Write the equation of the line passing through point $T(1,1)$ and forming an angle of $\pi/6$ with the OX axis. Also, provide the intersection point with the OY axis.