Perpendicular lines

Lines are *perpendicular* to each other if the angle between them is a right angle.

Two lines in the plane with gradients m_1 and m_2 are perpendicular if and only if $m_1 m_2 = -1$. (Vertical and horizontal lines are also perpendicular, but vertical lines do not have a gradient.)

Two lines in the plane with equations $a_1 x + b_1 y + c_1 = 0$ and $a_2 x + b_2 y + c_2 = 0$ are perpendicular if and only if $a_1 a_2 + a_2 b_2 = 0$.

If the direction vectors of two lines are $\mathbf{d}_1$ and $\mathbf{d}_2$, then the lines are perpendicular if and only if the dot product $\mathbf{d}_1 \cdot \mathbf{d}_2 = 0$.