

Section 4: Finding distances

Crucial points

1. **Remember that shortest distances always involve perpendicular lines**

The shortest distance from a point to a line or plane is the length of a line segment perpendicular to the line or plane, from the point to the line or plane. The shortest distance between two skew lines is the length of a line perpendicular to both lines.

2. **Remember that the distance between two parallel lines is the same as the distance from any point on one line to the other line**

You cannot use the formula for the distance between two skew lines to find the distance between two parallel lines, since the vector product of parallel vectors is zero. Instead, remember that the distance between two parallel lines is the distance from any point on one line to the other line, and use the formula for the distance of a point from a line.