1. Let P, Q, R and S be points in 3D-space with coordinates (1, 3, –1), (2, 3, 0), (4, 3, 2) and (6, 5, 3) respectively.
   1. Find and .

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* 1. Find parametric equations for the line 𝑙1 that passes through P and Q and the line 𝑙2 that passes through R and S.

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* 1. Show that the two lines 𝑙1and 𝑙2 intersect at the point R
  2. Compute the dot product •

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* 1. Compute the angle between the lines 𝑙1and 𝑙2

1. Let P, Q and R be three points in 3D-space; P has coordinates (2, 1, 5), Q has coordinates (3, 0, 5) and R has coordinates (3, 1, 7).
   1. Find and

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* 1. Compute the cross product × .

* 1. Find an equation for the plane through P, Q and R
  2. Find the coordinates of the point of intersection

1. Consider the plane in 3D-space with equation x +2y + 3z = 5 and the line with parametric equation (x, y, z) = (1, -1, 0) + t(–2, 1, –1). The plane and the line intersect at a point. Find the coordinates of the point of intersection.

1. Find the intersection point of the two lines 𝑙1:(𝑥,𝑦,𝑧)=(0,0,0)+𝑡(1,2,3),𝑡∈ℝ and 𝑙2:(𝑥,𝑦,𝑧)=(2,1,1)+𝑠(−1,1,2),𝑠∈ℝ.