

Section 3: Invariance

Crucial points

1. **Remember that the origin is always an invariant point for a linear transformation**

Either the origin is the only invariant point, or there are an infinite number of invariant points which all lie on the same straight line – a line of invariant points.

2. **Make sure that you know the difference between a *line of invariant points* and an *invariant line***

An invariant point is a point which is mapped to itself, so a line of invariant points is a line of points each of which is mapped to itself. An invariant line is a line of points each of which is mapped to a point which is also on the line (not necessarily itself). A line of invariant points is, of course, also an invariant line.