Work sheet

A locus of points – Loci of the centres of circles

Task 1. Find the locus of the centres of all circles with given radius that pass through given point S.

SOLUTION: The centres of such circles make up another circle with the centre in the given point S and the radius equal to the given radius of circles.

Task 2. Find the locus of the centres of all circles with given radius that touch given line p.

SOLUTION: The centres of such circles make up two lines parallel to the given line p such that the distance between these lines and line p is equal to the radius od circles.

Task 3. Find the locus of the centres of all circles that touch given line p at given point T.

SOLUTION: The centres of such circles make up a line that passes through point T and is perpendicular to line p.

Task 4. Find the locus of the centres of all circles that touch two given intersecting lines.

SOLUTION: The centres of such circles make up an angle bisector.

Task 5. Find the locus of the centres of all circles that touch two given parallel lines.

SOLUTION: The centres of such circles make up a line which is parallel to both given lines and is equidistant from both of the given lines.

Task 6. Find the locus of the centres of all circles that touch a given circle at given point T.

SOLUTION: The centres of such circles make up a line that passes through the given point T and the centre of the given circle.

Task 7. Find the locus of the centres of all circles with given radius that touch a given circle.

SOLUTION: The centres of such circles make up another circle whose centre is the same as the centre of the given circle and whose radius is either greater or smaller than the radius of the given circle – the difference is the radius of the touching circles.