NAME:_____

1. What is the locus of all points in the plane 4 cm from a given line?

   [A] a line perpendicular to the first [B] two parallel lines 4 cm from from either side of the first

   [C] a parallel line 4 cm from the first [D] a circle whose center is on the line

2. What is the locus of all points in the plane 3 cm from a given circle whose radius is 7 cm?

   [A] a circle with the same center as the first, with a radius of 4 cm

   [B] a circle with the same center as the first, with a radius of 10 cm

   [C] a line passing through the center of the circle

   [D] two circles with the same center as the first, with radii of 10 and 4 cm

3. What is the locus of all points in the plane 3 cm from a given segment?

   [A] two circles of radius 3 cm centered at the endpoints of the segment

   [B] two segments parallel to the original segment, 3 cm from either side

   [C] two segments parallel to the original, 3 cm from either side, and two semicircles of radius 3 cm centered at the endpoints of the segment

   [D] two lines parallel to the original segment, 3 cm from either side

4. What is the locus of all points in the plane on the path of the center of a nickel as it rolls around the edge of a quarter?

   [A] a scalloped or spiral shape around the quarter

   [B] a circle whose radius is equal to the radii of the two coins

   [C] a square with the same center as the quarter [D] a line through the centers of the two coins

5. What is the locus of all points in the plane equidistant from two given points?

   [A] the line connecting the two points [B] a circle containing both points

   [C] a segment perpendicular to the segment connecting the two points

   [D] the perpendicular bisector of the segment connecting the two points

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6. What is the locus of all points in the plane equidistant from a given line and a point not on the line?
   [A] a circle centered on the point with radius equal to the distance between the line and the point
   [B] a segment connecting the point and the line
   [C] a curved figure that passes between the line and the point
   [D] a line parallel to the original line halfway between the line and the point

7. What is the locus of all points in the plane equidistant from two lines that intersect at right angles?
   [A] a square centered at the intersection of the two lines
   [B] two lines slanted at 45 degrees to the first two lines
   [C] a line slanted at 45 degrees to the first two lines
   [D] a circle with center at the intersection of the two lines

8. What is the locus of all points in the plane equidistant from both sides of an angle?
   [A] the angle bisector [B] another angle in the opposite direction from the first
   [C] another angle surrounding the first [D] a circle centered at the vertex of the angle

9. Describe the locus of points in a plane a distance 5 from point *X* in that plane .
   [A] a line with *X* as the midpoint [B] a plane a distance 5 from the point *X*
   [C] a sphere with center *X* and radius 5 [D] a circle with center *X* and radius 5

10. Describe the locus of points in a plane equidistant from two parallel lines in that plane.
    [A] a circle with the lines as radii [B] a line parallel to the two lines and midway between them
    [C] a plane parallel to the two lines and midway between them
    [D] a circle with the lines as diameters

[1] B

[2] D

[3] C

[4] B

[5] D

[6] C

[7] B

[8] A

[9] D

[10] B