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

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

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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