

## 2.9 – Locus Problems

- In a plane, the locus of points  $b$  units from a fixed point  $A$  is a:
    - circle
    - line
    - point
    - ray
  - The locus of points equidistant from two parallel planes is:
    - a point
    - a line
    - one plane
    - two planes
  - In a plane, the locus of points equidistant from the sides of an angle is a: (Clue: interior)
    - a point
    - ray
    - plane
    - segment
  - The locus of points equidistant from two fixed points is:
    - a plane
    - two points
    - one point
    - a circle
  - In a plane, the locus of points  $x$  units from a fixed line  $l$  is:
    - a circle
    - a plane
    - one line
    - two lines
  - In a circle, the locus of the midpoints of all chords that are parallel to a fixed diameter is a:
    - circle
    - line
    - ray
    - segment
  - It is not possible for the intersection of a sphere and a plane to be:
    - a point
    - the null set
    - a line
    - a circle
  - The locus of points equidistant from the vertices of a triangle is:
    - another triangle
    - a line
    - a circle
    - a ray
- Write a precise description of the following loci:
- Points  $A$  and  $B$  are 10 cm. apart. The locus of points that are 3 cm from  $A$  and 4 cm from  $B$  is:
  - In a plane, the locus of points equidistant from two parallel lines is a:
  - The locus of points 3 cm. from a given plane  $Z$  is:

12. In a plane, the locus of points equidistant from two given points A and B is:
13. In a plane, what is the locus of points 2 cm. from a fixed point R in that plane? Draw and describe.
14. Given two concentric circles with radii 1 cm. and 3 cm. What is the locus of points in the plane of the two circles and equidistant from them? Describe and draw.
15. Given a square. The locus of points, in space, that are equidistant from the vertices of the square is:
16. Point P lies on line  $j$ , and  $j$  lies in plane X. The locus of the centers of all circles that lie in X and are tangent to  $j$  at P is:
17. Given points P and Q in space. The locus of points that are equidistant from P and Q is:
18. Given a point in a plane. The locus of points that lie in the plane and are 6 cm. from the given point is:
19. In space, the locus of points that are 8 cm. from a given point is:
20. Given two parallel lines in a plane. The locus of points that lie in that plane and are equidistant from the lines is:
21. Given a plane M. The locus of points 6 cm from M is
22. Point X lies in plane P. The locus of points that lie in P and are 5 cm from X is
- a) a point                      b) a line  
c) a plane                        d) a circle
- a) a circle                        b) a line  
c) a set of four points        d) a square
- a) a plane                        b) a pair of planes  
c) a sphere                        d) a circle
- a) a point                        b) a line  
c) a pair of lines                d) a segment
- a) a plane                        b) a pair of planes  
c) a sphere                        d) a rectangular solid
- a) a line                          b) a ray  
c) a segment                      d) a pair of points
- a) a point                        b) a pair of points  
c) a circle                        d) a sphere

23. Given a rectangle. The locus of points in the plane of the rectangle and equidistant from the vertices is

- a) the empty set
- b) a smaller rectangle
- c) the circumscribed circle
- d) a point

24. What is the locus of points in space 4 units above a given plan and 5 units from a given point on that plane?

- a) two // lines
- b) a line
- c) a point
- d) a circle
- e)  $\emptyset$

25. If a dime and a nickel are flat on a table, and the dime rolls around the edge of the nickel, the locus of the center of the dime is:

- a) a point
- b) a line
- c) a line segment
- d) 2 lines
- e) none of these