

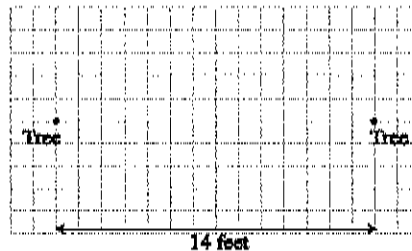
Locus Review

Do Work on Separate Sheet

Answer each of the following. Be sure to include a sketch as part of your answer when appropriate.

- 1) The equation of the circle is given by $(x - 3)^2 + (y + 2)^2 = 100$. What are the coordinates of the center of the circle?
1) $(-3, 2)$ 2) $(3, -2)$ 3) $(3, 2)$ 4) $(-2, 3)$
- 2) If the graphs of $x^2 + y^2 = 16$ and $y = 4$ are drawn on the same set of axes, how many points do the graphs have in common?
1) 1 2) 2 3) 3 4) 4
- 3) Wilson got lost hiking in the woods. A rescue team found his campsite and estimated that he could have traveled up to 3 miles since morning. What is the locus of points in which the rescuers could search?
1) a line 3 miles long 2) a square 3 miles long and wide
3) a ray 3 miles from the campsite 4) a circle with a radius of 3 miles
- 4) Write an equation of the circle whose center is $(6, -1)$ and whose radius is 5?
- 5) Car A is parked 7 miles from car B. Sketch the points that are 4 miles from car A and sketch the points that are 4 miles from car B. Label with an X all the points that satisfy both conditions.
- 6) The locus of points equidistant from two distinct points A and B is:
1) one line 2) two lines 3) one circle 4) two circles
- 7) A point P moves on a path in a plane such that its distance from a point A is always 10 units. The path of P forms a:
1) circle 2) parabola 3) straight line 4) pair of perpendicular lines
- 8) What is the locus of points in a plane that are 10 centimeters from the x -axis?
1) one point 2) one circle 3) one line 4) two lines
- 9) What is the total number of points equidistant from both the x - and y -coordinate axes and 2 units from the origin?
(1) 1 (2) 2 (3) 3 (4) 4
- 10) Which is an equation of the locus of points 4 units below the x -axis?
(1) $x = -4$ 2) $x = 4$ 3) $y = 4$ 4) $y = -4$

- 11) An equation of the locus of points 3 units from the origin is
- (1) $x = 3$ 2) $y = 3$ 3) $x^2 + y^2 = 3$ 4) $x^2 + y^2 = 9$
- 12) Which equation represents the locus of points equidistant from the points $(-5, 3)$ and $(-11, 3)$?
- 1) $x = -8$ 2) $y = -8$ 3) $x = -16$ 4) $y = -16$
- 13) A radio broadcasting tower can transmit a signal for 15 miles. What is the locus of the signal?
- 1) a circle 2) a line 3) a ray 4) a square
- 14) In order to locate an underground valve after it is buried a man measures its distance from 2 trees that are 14 feet apart. The valve is 8 feet from each tree. Construct the possible location(s) of the valve on the diagram below; let each square be 1 foot wide. Explain how you would use your diagram to find the valve.



ANSWERS

(Problems with * must include a diagram to receive full credit)

- 1) (2) 2) * (1) 3) * (4) 4) $(x + 6)^2 + (y + 1)^2 = 25$ 5) * (1) 6) * (1) 7) * (4) 8) * (4) 9) * (4) 10) (4) 11) (4)
- 12) * (1) 13) * (1)