

1. Write an equation for the circle with center (0,0) and a radius of 89.
2. Given the following equation of a circle, determine the radius $x^2 + y^2 = 169$.

[1]

[1]

3. Determine the equation of a circle given the center (0,0) and a point on the circumference (5,3).

[2]

4. A truck with a wide load is approaching a tunnel with a semi-circular cross-section and a maximum height of 5.25 m. If the load is 7 m wide and 3 m high, will it fit through the tunnel? Draw a sketch of the problem, explain your answer and include your calculations. Assume that there is one way traffic through the tunnel.

[3]