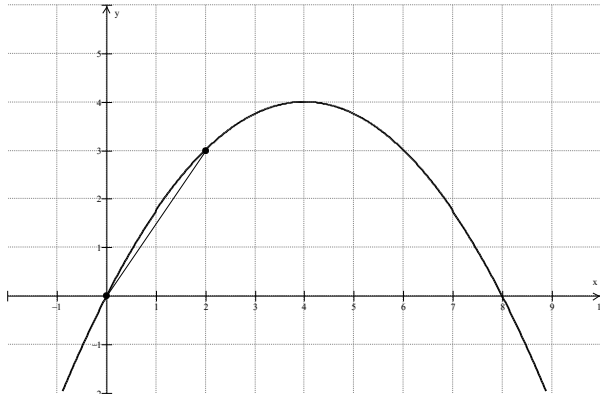


Practice Problems



1. A part of the function $f(x) = 4 - 0.25(x - 4)^2$ is approximated by a straight segment on the interval $[0, 2]$. Is there a point between 0 and 2 for which a line tangent to the function is parallel to the segment?

2. A solid homogenous sphere of 4 kg mass and radius 0.1 m rolls down a 2-meter-long incline. The angle of the incline to the horizontal is 30° . The initial velocity of the sphere is zero at the top of the incline. Calculate:
- A. The static friction coefficient for this system
 - B. The friction force between the incline and the sphere
 - C. The final velocity of the sphere at the end of the incline