Find the angle between the planes with the given equations.

40. 2*x* – *y* + *z* = 5 and *x* + *y* – *z* = 1

Find the values of r’ (*t*) and r’’ (*t*) for the given values of *t*.

8. r (*t*) = i cos t + j sin *t*; *t* = π/4

The acceleration vector a (t), the initial position r₀ = r (0), and the initial velocity v₀ = v (0) of a particle moving in xyz- space are given. Find its position vector r (t) at time t.

30. a(t) = 6*t*i – 5j + 12*t*²k; r₀ = 3i + 4j; v₀ = 4j – 5k

Find the curvature of the given plane curve at the indicated point.

10. *x* = *t* – 1, *y* = *t*² + 3*t* + 2, where *t* = 2

Find the unit tangent and normal vectors at the indicated point.

18. *x* = *t*³, *y* = *t*² at (-1, 1)