Answer on Question #62252 – Math – Analytic Geometry

Question

$$A = sint\ i + cost\ j + t\ k,$$

$$\frac{d^2A}{dt^2} = ?$$

Solution

Let's derive vector A twice:

$$\frac{dA}{dt} = (\sin t)'i + (\cos t)'j + (t)'\,k = \cos t\ i - sin\ t\ j + k,$$

$$\frac{d^2A}{dt^2} = (\cos t)'i - (\sin t)'j + (1)'k = -\sin t\ i - costj + 0k = sint - costj.$$

Answer: $\frac{d^2A}{dt^2} = sint - costj.$