

Exercise 1: $r(t) = (t^2 + 3t)j - 2\sin 3t i + 3e^{2t} k$
 Answer: $\frac{dr}{dt} = (2t+3)i - (6\cos 3t)j + 6e^{2t}k$

A) $\frac{dr}{dt} = (2t+3)i - (6\cos 3t)j + 6e^{2t}k$
 $\frac{d^2r}{dt^2} = 2i + 18\sin 3t j + 12e^{2t}k$

B) $\frac{d^2r}{dt^2} = 2i + 18\sin 3t j + 12e^{2t}k$
 $\left| \frac{d^2r}{dt^2} \right| = \sqrt{2^2 + 0.7.12^2}$
 $= 12.17$

Exercise 2: $r(t) = (t^2 + 3t)j - 2\sin 3t i + 3e^{2t} k$
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