**Chapter 1, Problem 2.**

Determine the current flowing through an element if the charge flow is given by

(a) *q*(*t*) = (3*t* + 8) mC

(b) *q*(*t*) = (8*t*2 + 4*t* – 2) C

(c) *q*(*t*) = (3e–*t* – 5e–2*t*) nC

(d) *q*(*t*) = 10sin(120π*t*) pC

(e) *q*(*t*) = 20e–4*t* cos(50*t*) µC