Math 172 Quiz 9 Sections: Fourier, 11.1, 11.2 30 November 2018

Name: _____

Point values in boxes.

1. 5 Let f(x) be 2π -periodic with one period given by f(x) = x for $x \in [-\pi, \pi)$. Find the Fourier coefficients, a_0, a_n , and b_n , for f(x).

2. Consider the parametric curve given by

$$x = 4t - 3$$
$$y = 2 - 3t$$

(a) 1 Find the arc length for $t \in [0, 3]$.

(b) 1 Find $\frac{dx}{dt}$ at t = 5.

(c) 1 Find $\frac{dy}{dt}$ at t = -7.

(d) 1 Find the slope $\frac{dy}{dx}$ at t = 3.

(e) 1 Find the speed $\frac{ds}{dt}$ at t = 2.