

MATH 251: Practice 5

June 2, 2015

Name: Solutions.

Evaluate the following:

$$\lim_{t \rightarrow 1} \left\langle t^2 + t + 1, e^t + \frac{1}{t}, \frac{t^2 - 5t + 4}{t-1} \right\rangle = \frac{(t-1)(t-4)}{t}$$

$$\frac{d}{dt} [\langle \sin(t), e^{2t} + t^2, t^3 + 4 \rangle]$$

$$\int \langle \cos(t), t^2, e^t \rangle dt$$

a) $\langle 3, e+1, -3 \rangle$

b) $\langle \cos t, 2e^{2t} + 2t, 3t^2 \rangle$

c) $\langle \sin |t|, t^3/3, e^t \rangle + \vec{c}$