

1. (20 points) Evaluate the following integrals:

(a)  $\int \sin(3x)dx$

(b)  $\int x\sqrt{1+x^2}dx$

(c)  $\int x^3e^{1+x^4}dx$

(e)  $\int \frac{e^x}{e^x+7}dx$

(f)  $\int x\sqrt{4+xdx}$ .