

1. (a) 1
(b) $2x$
(c) $a \cos(ax)$
(d) $-a \exp(-ax) = -ae^{-ax}$
(e) $\frac{1}{x}$
2. (a) 0
(b) -1
(c) 0
3. (a) $\frac{1}{3}x^3 + C$
(b) $-\cos x + C$
4. (a) $\frac{1}{3}$
(b) $(1) - (-1) = 2$
5. (a) $f(x) = e^{-x}$