

Evaluate the following

1. $\int 7e^{4x} dx$

2. $\int \frac{2x}{1+x^2} dx$

3. $\int \frac{\sin(\sqrt{x})}{\sqrt{x}} dx$

Hint: Let $u = \sqrt{x}$

4. $\int \sec(x)^2 \tan(x) dx$

5. $\int x\sqrt{x+1} dx$

Hint: Let $u = x + 1$

6. $\int \frac{1}{1+x^2} dx$