

Gateway Review Sheet

Calculus II, Math 112

Name: _____

1. Write the derivatives of each of the following functions:

(a) $\frac{d}{dx} \sin(x) =$

(b) $\frac{d}{dx} \cos(x) =$

(c) $\frac{d}{dx} \tan(x) =$

(d) $\frac{d}{dx} \csc(x) =$

(e) $\frac{d}{dx} \sec(x) =$

(f) $\frac{d}{dx} \cot(x) =$

(g) $\frac{d}{dx} \arcsin(x) =$

(h) $\frac{d}{dx} \arctan(x) =$

(i) $\frac{d}{dx} \operatorname{arcsec}(x) =$

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

3. $\int z(\ln(z))^2 dz$

$$4. \int \frac{6x^2 + 20x + 16}{x(x^2 + 5x + 8)} dx$$

$$5. \int_{1/3}^1 \frac{1}{1 + 3x} dx$$

6. $\int_2^8 \frac{1}{\sqrt{x}(\sqrt{x}+1)} dx$

7. $\int \arcsin(x) dx$

8. $\int e^{7x} \cos(2x) dx$