

Math 2320 - Quiz 2

Name: _____

Recall the following derivatives.

1. $\frac{d}{dx} [x^n] = nx^{n-1}$
2. $\frac{d}{dx} [e^x] = e^x$
3. $\frac{d}{dx} [\ln(x)] = \frac{1}{x}$
4. $\frac{d}{dx} [\sin(x)] = \cos(x)$
5. $\frac{d}{dx} [\cos(x)] = -\sin(x)$
6. $\frac{d}{dx} [\tan(x)] = \sec^2(x)$
7. $\frac{d}{dx} [\cot(x)] = -\csc^2(x)$
8. $\frac{d}{dx} [\sec(x)] = \sec(x) \tan(x)$
9. $\frac{d}{dx} [\csc(x)] = -\csc(x) \cot(x)$

Use the above to write their corresponding antiderivative formula. I will do the first.

1. $\int x^n dx = \frac{x^{n+1}}{n+1} + C$
2. $\int e^x dx =$
3. $\int \frac{1}{x} dx =$
4. $\int \cos(x) dx =$
5. $\int \sin(x) dx =$

$$6. \int \sec^2(x) dx =$$

$$7. \int \csc^2(x) dx =$$

$$8. \int \sec(x) \tan(x) dx =$$

$$9. \int \csc(x) \cot(x) dx =$$

Use these formulas to compute the following antiderivatives.

$$1. \int 4x^2 - 7x^{2/3} + \frac{3}{x^2} - 2 dx$$

$$2. \int \frac{3}{x^2} + \frac{3}{x} dx$$

$$3. \int e^x - (2x + 3)^2 dx$$

$$4. \int \sin(x) - \cos(x) dx$$

$$5. \int \frac{3x^2 - x}{2x} dx$$

$$6. \int \sec(x)(\sec(x) - 2 \tan(x)) dx$$

Also hand in the following homework problems.

5.2: 31-35,39

5.3: 31, 41, 51, 64

5.4: 19, 21