

CALC 2 - REVIEW/PREVIEW UNIT 1

TEST YOURSELF ON THESE BASIC DERIVATIVES:

$$1. \frac{d}{dx}(c) =$$

$$2. \frac{d}{dx}(x) =$$

$$3. \frac{d}{dx}(5x) =$$

$$4. \frac{d}{dx}(x^2) =$$

$$5. \frac{d}{dx}(x^3) =$$

$$6. \frac{d}{dx}\left(\frac{1}{x}\right) =$$

$$7. \frac{d}{dx}(\sqrt{x}) =$$

$$8. \frac{d}{dx}\left(\frac{1}{\sqrt{x}}\right) =$$

$$9. \frac{d}{dx}[f(x) + g(x)] =$$

$$10. \frac{d}{dx}[f(x) - g(x)] =$$

$$11. \frac{d}{dx}(f(x)g(x)) =$$

$$12. \frac{d}{dx}\left[\frac{f(x)}{g(x)}\right] =$$

$$13. \frac{d}{dx}[cf(x)] =$$

$$14. \frac{d}{dx}[f(g(x))] =$$

$$15. \frac{d}{dx}[x^n] =$$

$$16. \frac{d}{dx}(cx^n) =$$

$$17. \frac{d}{dx}(e^x) =$$

$$18. \frac{d}{dx}(a^x) =$$

$$19. \frac{d}{dx}(\ln|x|) =$$

$$20. \frac{d}{dx}(\log_a|x|) =$$

$$21. \frac{d}{dx}(\sin x) =$$

$$22. \frac{d}{dx}(\cos x) =$$

$$23. \frac{d}{dx}(\tan x) =$$

$$24. \frac{d}{dx}(\sec x) =$$

$$25. \frac{d}{dx}(\cot x) =$$

$$26. \frac{d}{dx}(\csc x) =$$

$$27. \frac{d}{dx}(\arctan x) =$$

$$28. \frac{d}{dx}(\arcsin x) =$$

$$29. \text{NEW! } \frac{d}{dx}(\operatorname{arcsec} x) =$$

FIND THE DERIVATIVE OF EACH OF THE FOLLOWING FUNCTIONS. YOU SHOULD BE ABLE TO DO THESE QUICKLY AND COMPLETELY FREE OF ERRORS

1. $f(x) = e^{\sqrt{x}}$

$f'(x) =$

7. $f(x) = \sec(\ln x)$

$f'(x) =$

2. $f(x) = \frac{x^3}{\log_2(\cos x)}$

$f'(x) =$

8. $f(x) = x\sqrt{x^2-1}$

$f'(x) =$

3. $f(x) = 2\pi \arctan \sqrt{x}$

$f'(x) =$

9. $f(x) = \ln(\ln(\ln x))$

$f'(x) =$

4. $f(x) = \frac{\sin(x^2)}{x^2}$

$f'(x) =$

10. $f(x) = \cot\left(\frac{1}{x}\right)$

$f'(x) =$

5. $f(x) = \frac{x^2+1}{\sqrt{x}} + \frac{\sqrt{x+1}}{3x}$

$f'(x) =$

11. $f(x) = \log(\arcsin x^2)$

$f'(x) =$

6. $f(x) = \sin(xe^{3x})$

$f'(x) =$

12. $f(x) = \sqrt{x + \sqrt{x+1}}$

$f'(x) =$