

Math 151 - Three Minute Challenge

1. $\lim_{x \rightarrow \infty} \frac{1}{x^2} =$ _____

2. $\lim_{x \rightarrow 0} \frac{\sin(x)}{x} =$ _____

3. $\lim_{x \rightarrow 0} \frac{\cos(x)-1}{x} =$ _____

4. $\lim_{x \rightarrow \infty} \left(1 + \frac{1}{x}\right)^x =$ _____

5. $\frac{d}{dx}[k] =$ _____

6. $\frac{d}{dx}[kx] =$ _____

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

8. $\frac{d}{dx}[e^x] =$ _____

9. $\frac{d}{dx}[b^x] =$ _____

10. $\frac{d}{dx}[\sin(x)] =$ _____

11. $\frac{d}{dx}[\cos(x)] =$ _____

12. $\frac{d}{dx}[\tan(x)] =$ _____

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

14. $\frac{d}{dx}[\csc(x)] =$ _____

15. $\frac{d}{dx}[\cot(x)] =$ _____

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

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

18. $\frac{d}{dx}[f(x)^n] =$ _____

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

20. $\frac{d}{dx}[\sin^{-1}(x)] =$ _____

21. $\frac{d}{dx}[\cos^{-1}(x)] =$ _____

22. $\frac{d}{dx}[\tan^{-1}(x)] =$ _____

23. $\frac{d}{dx}[\sinh(x)] =$ _____

24. $\frac{d}{dx}[\cosh(x)] =$ _____

25. $\frac{d}{dx}[\tanh(x)] =$ _____

26. $\frac{d}{dx}[\sinh^{-1}(x)] =$ _____

27. $\frac{d}{dx}[\cosh^{-1}(x)] =$ _____

28. $\frac{d}{dx}[\tanh^{-1}(x)] =$ _____

29. $\frac{d}{dx}[\ln(x)] =$ _____

30. $\frac{d}{dx}[\log_b(x)] =$ _____

Other things I should know.

1. Quadratic formula:

6. $\sin(2x) =$

2. Distance Formula

7. $\cos(2x) =$

3. $a^2 - b^2 =$

8. $\sin^2(x) + \cos^2(x) =$

4. $a^3 + b^3 =$

9. $\tan(x) =$

5. $a^3 - b^3$

10. Law of Cosines