Formulas for AP Calculus BC Update 2023   Name_____

1. slope of a parametrized curve   _____

2. $\int \tan u \, du$ _____

3. $\int \cot u \, du =:$ _____

4. $\int \sec u \, du =:$ _____

5. $\int \csc u \, du =:$ _____

6. Integration by parts   _____

7. order for choosing u in integration by parts: _____

8. logistics differential equation   _____

9 logistic growth model   _____

10 length of curve (Cartesian):   _____

11. partial sum of a geometric series   _____

12a) What is the formula for the sum of an infinite geometric series _____

12b) For what values of r does a geometric series converge?_____

13. Maclaurin Series   _____

14. Taylor Series   _____

15. Maclaurin Series for $\frac{1}{1-x}$ _____

16 Maclaurin Series for $\frac{1}{1+x}$ _____

17 Maclaurin Series for e^x _____

18 Maclaurin Series for $\sin x$ _____

19 Maclaurin Series for $\cos x$ _____

20 Maclaurin Series for $\ln(1+x)$ _____

21 Maclaurin Series for $\tan^{-1}(x)$ _____

22 LaGrange form of Remainder   _____

23 Remainder Estimation Theorem   _____

24 $\int \frac{du}{\sqrt{a^2 - u^2}}$ _____

25 $\int \frac{du}{a^2 + u^2}$ _____

$26 \int \frac{du}{u\sqrt{u^2-a^2}}$

_____

27 What does this series converge to $\sum_{n=0}^{\infty} \frac{1}{n!}$ _____

28 What does this series converge to $\sum_{n=1}^{\infty} b_n - b_{n+1}$ _____

29 For what values of p does the series converge $\sum_{n=1}^{\infty} \frac{1}{n^p}$ _____

30 Does the series converge? $\sum_{n=1}^{\infty} \frac{1}{n}$ _____

31 Does the series converge? $\sum_{n=1}^{\infty} (-1)^n \frac{1}{n}$ _____

32 2nd derivative of a parameterized curve   _____

33 length of a parameterized curve   _____

34 position vector (standard form)   _____

35 speed from velocity vector   _____

36 direction from velocity vector   _____

37 polar to Cartesian formula   _____

38 trajectory equations   _____

39 slope of polar graph: _____

40 slope of polar graph at origin   _____

41 area inside polar curve   _____

42 length of curve (polar)   _____

43 Parameterization of ellipse   _____