$$I_{s} = O(n^{-1/2}) \text{ as } n \to \infty?$$
 (prove it)

Say 
$$C>0$$
 is fixed. Is  $C=0$  (1) as  $n=2$ 

$$C^{-n} = o\left(\frac{1}{n!}\right) \quad \text{as } n \to \infty$$
?

still more filming to be done at Dartmouth and on other campuses along with interviews with experts

Feature Film Market. We will continue our outreach to groups that work on the prevention of

the documentary with a planned completion date around the end of 2014. We are hoping to release

Once completed, Silent U. will hopefully reach millions of people through theatrical distribution, Netflix,

B) Let a>0. Write the Taylor series for 
$$f(x) = \frac{1}{x-a}$$
 about  $x=0$ :

[Hint:  $\sum_{k=0}^{\infty} (\frac{x}{a})^k = ?$ ]

Let a>0. Write the Taylor series for  $f(x) = \frac{1}{x-a}$  about x=0:

Oxia x

[Hint:  $\sum_{k=0}^{\infty} (x)^k = ?$ ]

film that investigates college rape and provides some insight into what can be done about it.

Fixing x, derive a bound on E, the error in n-term Taylor series; writing in O notation:

V-Day, One Student, Mentors in Violence Prevention, Victors Rights Law Center and Men Can Stop Rape. Universities have already begun requesting screenings of Silent U. because there is a need for a

Make a conjecture on convergence rate given |x1 (dist. from expansion pt), a (dist. of singularity from expansion pt)

C) What axes show algebraic convergence as straight line?

How about exponential conv.?. - Interpret the slopes. BONUS: What if E shrinks to fast as to double the # correct digits as nonnel?

3/26/13 Bandt A) Is  $\frac{\log n}{n} = O(n^{-1/2})$  as  $n \to \infty$ ? [prove it]  $f(n) = \frac{\log n}{g(n)} = \frac{\log n}{n!n} \xrightarrow{\infty} 2 \frac{2 \ln n!n}{\ln n!n} = \frac{1}{2 \ln n} \xrightarrow{\infty} 0 \text{ so yes.}$ (it's evan (ithe-o). Say C>0 is fixed. Is  $C^{-n}=o(\frac{1}{n!})$  as  $n\to\infty$ ?  $\frac{d}{dt} = \frac{C^{-h}}{V_{n!}} = \frac{n!}{C^{-n}}$  can't now l'Hôp since  $\frac{d}{dt_{n}}(n!) = ??$  Use: n! grows first  $t_{n}$  them exponential. Let a > 0. Write the Taylor series for  $f(x) = \frac{1}{x-a}$  about x=0:  $|a| = \frac{1}{|a|} = \frac{1}{|a-x|} = \frac{1}{|a = -\frac{1}{4} - \frac{x^2}{a^2} - \frac{x^2}{a^3} - \cdots$ Fixing x, derive a bound on E, the error in n-term Taylor series; writing in O notation:  $\xi = -\frac{\sum x^{k}}{a^{k+1}} \quad \text{so} \quad |\xi| \leq \frac{1}{a} \frac{\sum |x|^{k}}{a^{k}} = \frac{1}{a} \frac{|x|^{n+1}}{a^{k}} \frac{\sum |x|^{k}}{a^{k}}$   $= \frac{1}{a} \frac{1 - |x|}{1 - |x|} \frac{|x|}{a^{k}} = O(|x|^{n+1}) = O(|x|^{n})$   $= O(|x|^{n+1}) = O(|x|^{n})$ Make a conjecture on convergence rate given |x1 (distribunexpansion pt), a (distribunexpansion pt), a (distribunexpansion pt):

rate  $\Gamma = \frac{|x|}{a} = \frac{dist}{a} = \frac{dist}{singularity} tist from expansion pt} = \frac{singularity}{singularity} tist from expansion pt} = \frac{slope is p if singularity}{slope is p if singularity}$ What axes show algebraic convergence as straight line? Insert some fune of E some fune of E some fune of n How about exponential conv.? In E shrinks to fast as to double the # correct digita as nonnel? In 1 2" or In (In E)