Name:	Exercise Type (Cost):
J#:	**In-Class (1AP)**
Date: **2017 July 11**	

Standard: This student is able to...	Mark:
C08: Work. Express the work done in a system as a definite integral.	
Extra2 ⋆ reattempt due on:	

Hooke's Law states that the force required to stretch or compress a spring x units from its natural length requires $F(x) = kx$ units of force for some constant k (depending on the spring). Suppose a spring satisfies $k = 3$ and is naturally length 5. Find a definite integral equal to the work required to compress this spring from length 4 to length 2. (Do not solve your integral.)

Name:	Exercise Type (Cost):
J#:	**In-Class (1AP)**
Date: **2017 July 12**	

Standard: This student is able to...	Mark:
C11: SeqLim. Compute the limit of a convergent sequence.	
3/4 ⋆ reattempt due on:	

Recall that the recursive defintion of a factorial is given by $0! = 1$ and $(n+1)! = n!(n+1)$.

Find $\lim_{n\to\infty} \frac{\frac{3^{n+1}}{(n+1)!}}{\frac{3^n}{n!}}$.

Name:	Exercise Type (Cost):
J#:	**In-Class (1AP)**
Date: **2017 July 12**	

Standard: This student is able to...	Mark:
C12: PartSum. Find the value of a convergent series by expressing it as a limit of partial sums.	
2/4 ⋆ reattempt due on:	

Find a formula for the partial sum $s_n = a_0 + a_1 + \cdots + a_n$ where $a_n = (\frac{3n+4}{n+1} - \frac{3n+7}{n+2})$. Then use this formula to prove that $\sum_{n=0}^{\infty}(\frac{3n+4}{n+1} - \frac{3n+7}{n+2}) = 1$.

Name:	Exercise Type (Cost):
J#:	**In-Class (1AP)**
Date: **2017 July 12**	

Standard: This student is able to...	Mark:
S11: GeoAlt. Determine if a geometric series or alternating series is convergent or divergent.	
1/3 ⋆ reattempt due on:	

Recall that the geometric series $\sum_{n=0}^{\infty} ar^n$ converges to $\frac{a}{1-r}$ when $|r| < 1$ and diverges otherwise.

Does the series $\sum_{k=1}^{\infty} 3^{-k} = \frac{1}{3} + \frac{1}{9} + \frac{1}{27} + \ldots$ converge or diverge? If it converges, what it is value?