

- 1 FIND THE VOLUME OF A SOLID OF REVOLUTION**

- 4 FIND THE DERIVATIVE OF A GIVEN FUNCTION SHOW ALL WORK**

- 2 FIND THE INTEGRAL OF A GIVEN FUNCTION SHOW ALL WORK**

- 2 FIND THE INTEGRAL OF A GIVEN FUNCTION YOU MAY USE YOUR CALCULATOR**

- 1 EVALUATE AN IMPROPER INTEGRAL**

- 1 EVALUATE A MESSY LIMIT**
- 1 FIND THE FIRST FEW TERMS OF A SEQUENCE**
- 2 DETERMINE IF A GIVEN SERIES IS ABSOLUTELY CONVERGENT, CONDITIONALLY CONVERGENT, OR DIVERGENT**
- 1 FIND THE INTERVAL OF CONVERGENCE OF A POWER SERIES**
- 1 FIND A MACLAURIN POLYNOMIAL FOR A GIVEN FUNCTION**

Examples:

Find the Maclaurin polynomial of degree n for the

function $f(x) = e^{3x}$, $n=4$.

n th derivative coefficients

n	$f^{(n)}(x)$	$f^{(n)}(0)$	$\frac{f^{(n)}(0)}{n!}$
0	e^{3x}	1	$1/0!=1$
1	$3e^{3x}$	3	$3/1!=3$
2	$9e^{3x}$	9	$9/2!=9/2$
3	$27e^{3x}$	27	$27/3!=27/6$
4	$81e^{3x}$	81	$81/4!=81/24$

