

UW 7/9/07

~~Carlson Max for Chapter 2~~

1st Order

• Runge-Kutta (Euler)

2nd Order

• Modified Euler's

• Heun's

• Ralston's

3rd Order

• Runge-Kutta

4th Order

• Runge

• Kutta

• Runge-Kutta-Gill

	$b_1$	$a_{10}$	$b_2$	$a_{20}$	$a_{21}$	$b_3$	$a_{30}$	$a_{31}$	$a_{32}$	$b_4$	$a_{40}$	$a_{41}$	$a_{42}$	$a_{43}$
1st Order														
• Runge-Kutta (Euler)	1	1												
2nd Order														
• Modified Euler's	0	1	1	1	$\frac{1}{2}$									
• Heun's	$\frac{1}{2}$	1	$\frac{1}{2}$	1	1									
• Ralston's	$\frac{1}{3}$	1	$\frac{2}{3}$	1	$\frac{3}{4}$									
3rd Order														
• Runge-Kutta	$\frac{1}{6}$	1	$\frac{2}{3}$	1	$\frac{1}{2}$	$\frac{1}{6}$	1	-1	2					
4th Order														
• Runge	$\frac{1}{6}$	1	$\frac{1}{3}$	1	$\frac{1}{2}$	$\frac{1}{3}$	1	$\frac{1}{6}$	$\frac{1}{2}$	$\frac{1}{6}$	1	$\frac{1}{6}$	$\frac{1}{2}$	1
• Kutta	$\frac{1}{8}$	1	$\frac{3}{8}$	1	$\frac{1}{3}$	$\frac{3}{8}$	1	$-\frac{1}{3}$	1	$\frac{1}{8}$	1	1	-1	1
• Runge-Kutta-Gill	$\frac{1}{6}$	1	$\frac{2-\sqrt{2}}{6}$	1	$\frac{1}{2}$	$\frac{2+\sqrt{2}}{6}$	1	$\frac{-1+\sqrt{2}}{2}$	$\frac{2-\sqrt{2}}{2}$	$\frac{1}{6}$	1	0	$\frac{-\sqrt{2}}{2}$	$\frac{2+\sqrt{2}}{2}$