

Taylor Series for f(X)	f(0)		f'(0)		f''(0)		f'''(0)		f''''(0)		f'''''(0)		f''''''(0)		
	x		x		x		x		x		x		x		
Around X=0	1	+	X/1	+	X ² /2!	+	X ³ /3!	+	X ⁴ /4!	+	X ⁵ /5!	+	X ⁶ /6!	+	...
Taylor Series for e ^x X=1 Cumulative value e ¹ =2.718	e ⁰		e ⁰		e ⁰		e ⁰		e ⁰		e ⁰		e ⁰		
	1		1		1		1		1		1		1		
	1	+	X/1	+	X ² /2!	+	X ³ /3!	+	X ⁴ /4!	+	X ⁵ /5!	+	X ⁶ /6!	+	...
	1.000	+	1.000	+	0.500	+	0.167	+	0.042	+	0.008	+	0.001	+	...
	1.000 =>		2.000 =>		2.500 =>		2.667 =>		2.708 =>		2.717 =>		2.718	+	...
Taylor Series for cos(X) X=π/3 Cumulative value cos(π/3)=0.5	cos(0)		-sin(0)		-cos(0)		sin(0)		cos(0)		-sin(0)		-cos(0)		
	1		0		-1		0		1		0		-1		
	1	+	0	+	-X ² /2	+	0	+	X ⁴ /4!	+	0	+	-X ⁶ /6!	+	...
	1.000	+	0.000	+	-0.548	+	0.000	+	0.050	+	0.000	+	-0.002		
	1.000 =>		1.000 =>		0.452 =>		0.452 =>		0.502 =>		0.502 =>		0.500		
Taylor Series for sin(X) X=π/3 Cumulative value sin(π/3)=0.866	sin(0)		cos(0)		-sin(0)		-cos(0)		sin(0)		cos(0)		-sin(0)		
	0		1		0		-1		0		1		0		
	0	+	X/1	+	0	+	-X ³ /6	+	0	+	X ⁵ /5!	+	0	+	...
	0.000	+	1.047	+	0.000	+	-0.191	+	0.000	+	0.010	+	0.000		
	0.000 =>		1.047 =>		1.047 =>		0.856 =>		0.856 =>		0.866 =>		0.866		
Taylor Series for e ^{ix} cos X isinX e ^{ix} =cosX+isinX	1		i		i ²		i ³		i ⁴		i ⁵		i ⁶		
	1		i		-1		-i		1		i		-1		
	1	+	X/1	+	X ² /2	+	X ³ /6	+	X ⁴ /4!	+	X ⁵ /5!	+	X ⁶ /6!	+	...
	1	+	iX/1	+	-X ² /2	+	-iX ³ /6	+	X ⁴ /4!	+	iX ⁵ /5!	+	-X ⁶ /6!	+	...
	1	+	iX/1	+	X ² /2	+	iX ³ /6	+	X ⁴ /4!	+	iX ⁵ /5!	+	X ⁶ /6!	+	...

The Magic of Taylor Series - Student Activity Solution

