







**n**

**Liouville**

**Laplace**

**Liouville**

**Laplace**

**Laplace**

**Laplace**

**Cauchy**

**Liouville**

**Laplace**

**Liapunov**

**Liapunov**

**[1]**

**[2]**

**[3]**

**[4]**

**1982**

**1983**

**1994**

**1982**



**Cauchy-Riemann**

**Cauchy-Riemann**

**Cauchy-Riemann**

**Cauchy-Riemann**

**Cauchy-Riemann**

**Cauchy**

**Cauchy  
Liouville**

**Cauchy  
Morera**

**Goursat**

**Cauchy**

**Cauchy**

**Cauchy**

**Cauchy**

**Cauchy**

**Cauchy**

**Cady**

**Liouille**

**Mrea**

**Cady**  
**Mrea**

**Cady**

**Cady**  
**Liouille**

**Larent**



- [1] 1988 5 2
- [2] 1984 4 1
- [3] 1979 2 1
- [4] John B. Conway, **Functions of One Complex Variable**, Springer-Verlag, New York, 1978









**[1]**  
**[2]**

**1997**  
**2002**

**Lebesgue**

**Lebesgue**

**Lebesgue**

$R^n$

**Lebesgue**

**Bernstein**

**[0]**

**Zorn**

**[0]**

$R^n$

$R^n$

$R^n$

**Bolzano Weierstrass**

**Borel**

**Cantor**

**Bolzano Weierstrass**

**Borel**

**Cantor**

$R^n$

$R^n$

**Bolzano Weierstrass**

**Borel**



**Cantor**

**Carathéodory**

$F_\sigma$     $G_\delta$    **Borel**

$F_\sigma$     $G_\delta$

**Borel**

**Lebesgue**

**Carathéodory**

**Lebesgue**

$F_\sigma$

$G_\delta$    **Borel**

**Carathéodory**

$F_\sigma$     $G_\delta$    **Borel**

$F_\sigma$     $G_\delta$

**Borel**

**Egoroff   Riesz   Lebesgue**

**Lusin**

**Egoroff**

**Egoroff**

**Lusin**

**Lusin**

**Riesz**

**Lebesgue**

**Egoroff**

**Riesz**

**Lebesgue**

**Lusin**

**Lebesgue**

**Lebesgue**

**Lebesgue**

**Riemann**

**Lebesgue**

**Fubini**

**Lebesgue**

**Lebesgue**

**NL**

**Lebesgue**

**Lebesgue**

**Lebesgue**

**Lebesgue**

**Lebesgue**

**Lebesgue**

**Lebesgue**

**Lebesgue**

**Fatou**

**Fubini**

**Fubini**

**Jordan**

**Lebesgue**

**Lebesgue**

**Lebesgue**

**NL**

**Lebesgue Sierpinski**

**Lebesgue Sierpinski**

**Lebesgue Sierpinski**

**Lebesgue**

**Lebesgue**

**Lebesgue**

**Riemann**

**Lebesgue**

**Fubini**

**Lebesgue**

**Lebesgue**

**NL**

**Lebesgue**

[1]

1983 1

[2]

1994 2

[3]

1992 2







<b>[1]</b>		<b>1978</b>	<b>5</b>	<b>1</b>
<b>[2]</b>		<b>1979</b>	<b>12</b>	<b>1</b>
<b>[3]</b>		<b>1999</b>	<b>10</b>	<b>1</b>
<b>[4]</b>		<b>2000</b>	<b>5</b>	

**Hilbert      Banach**

**Banach**

**Hilbert      Banach**

**Cauchy**

**Banach**

$R^n$

$C[a,b]$

$l^p$

•

•



**Cauchy**

**Cauchy**

**Banach**

**Banach**

$\mathbb{R}^n$

$C[a, b]$

$l^\infty$

$L$

$E[a, b]$

$l^p$

**Banach**

$\mathbb{R}^n$

$C[a, b]$

$l^\infty$

$L^\infty$

$l^p$

$L^p[a, b]$

**Hilbert**

**Hilbert**

**Hilbert**

**Hilbert**

**Hilbert**

**Hilbert**

**Fourier**

**Bessel**

**Paseval**

**Fourier**

**GramSchmidt**

**Hilbert**

**Hilbert**

**Riesz**

**Hilbert**

**Bessel**

**Paseval**

**Fourier**

**Riesz**

**Hilbert**

**Riesz**

**Hilbert**

**Cauchy**

**Riesz**

**Baire**

**Fourier**

**Hilbert**

**Riesz**

**Baire**

[1]

1883

[2]

1902

[3]

1905



$T_1 T_2$

$T_1 T_2$

$T_1 T_2$

$T_3 T_4$

$T_3 T_4$

$T_3$

$T_4$

$T_2$

$T_2$

**[1]**  
**[2]**  
**[3]**  
**[4]**

**1986**  
**1978**  
**1997**  
**1997**

**1 C**



**2**

—

**3**

**5**

**6**

**7**

**88**





<b>1</b>	<b>C</b>	<b>C</b>	<b>2</b>	
<b>2</b>			<b>2</b>	
<b>3</b>			<b>2</b>	
<b>4</b>			<b>2</b>	
<b>5</b>			<b>6</b>	
<b>6</b>			<b>6</b>	
<b>7</b>			<b>6</b>	
<b>8</b>			<b>2</b>	
<b>9</b>			<b>8</b>	



[1] . C  
[2] . C

1999

1992









12  
13  
14  
15

.

2014

2002

2011

2009

**Fient**

**Fient**

**Fient**

**Fient**

**Frenet**

**Gauss**

**Gauss**

**Wingarten**

**Wingarten**

**Wingarten**

**Gauss**

**Euler**

**Gauss**

**Gauss**

**Gauss**

**Gauss**

**Gauss Bonnet**

**Gauss Bonnet**

**Gauss Bonnet**

**Gauss**

- [1] 1994
- [2] 2002
- [3] 2006
- [4] Alfred Gray Modern Differential Geometry of Curves and Surfaces with  
MATHEMATICA Second Edition New York CRC Press 1998















[1]

“ ”

2014

[2]

“ ”

2016

[3]

“ ”

2016

[4]

”

“

2017