Appendix A Glossary of Notation

- У Великобританії та США розряди чисел відокремлюють один від одного комою, а ціле число від дробового у десятко-вих дробах – крапкою.
- Нуль як одну із цифр числа вимовляють *o* [qu], можна також вимовляти як *nought* [nO:t] або *zero* ["zIqrqu]; у ролі самостій-ного числа нуль вимовляють *zero* ["zIqrqu].
- Усі літери латинського алфавіту читають відповідно до їхніх англійських назв.

$+$	plus
$-$	minus
$\pm$	plus or minus
$\times$ $\cdot$	multiplied by
$\div$: /	divided by
( )	round brackets; parentheses
{ }	curly brackets; braces
[ ]	square brackets; brackets
$\ldots$	and so on to
$\equiv$	(is) identical with; (is) always equal to; (is) congruent to
$\sim$	equivalent, similar; of the order of; proportional to
$\cong$	(is) approximately equal to; approximately equals
∞	infinity
$x \to \infty$	*x* tends to infinity; *x* approaches infinity
$\propto$	varies directly as; (is) (directly) proportional to
$-a$	negative *a*
$!$ $(n!)$	*n* factorial
$\hat{\varphi}$	phi hat
a'	*a* prime
a''	*a* double prime
a''_2	*a* second, double prime; *a* double prime, second
a'''	*a* triple prime
f'_c	*f* prime sub (suffix) *c;* *f* suffix (sub) *c*, prime

$\vec{a}$	*a* vector; the mean value of *a*
$\dot{a}$	the first derivative
$\ddot{a}$	the second derivative
$\dddot{a}$	the third derivative
a_1	*a* first; *a* sub one; *a* suffix one
a_n	*a* *n*-th; *a* sub *n;* *a* suffix *n*
a_k^2	*a* sub *k* sup 2; *a* sup 2 sub *k*

$10''$	ten seconds; ten inches
$90°$	ninety degrees
$87°6'10''$	eighty seven degrees six minutes ten seconds
$\sin 30.2°$	the sine of thirty point two degrees
$\tan\theta = \frac{sin\theta}{cos\theta}$	the tangent of theta equals the sine of theta over the cosine of theta
$\cos A = \frac{tan b}{cot c}$	the cosine of capital *A* is equal to the tangent of *b* divided by the cotangent of *c*
$\tan\theta = \frac{sec\theta}{csc\theta}$	tangent theta equals secant theta over cosecant theta
$a = b$	*a* is *b*; *a* equals *b*; *a* is equal to *b*
$a \neq b$	*a* is not *b*; *a* does not equal *b*; *a* is not equal to *b*
$a \approx b$	*a* approximately equals *b*
$a \pm b$	*a* plus or minus *b*
$a > b$	*a* is greater than *b*
$a >> b$	*a* is much greater than *b*
$a < b$	*a* is less than *b*
$a << b$	*a* is much less than *b*
$a \geq b$	*a* is greater than or equals *b*
$a \leq b$	*a* is less than or equals *b*
$a_2 > a_d$	*a* second is greater than *a* *d*-th

$\lvert a \rvert$	the modulus of a; the absolute value of a
$a + b = c$	*a* plus *b* is *c;* *a* plus *b* equals *c;* *a* plus *b* is equal to *c;* *a* plus *b* makes *c*
$4 + 7 = 11$	four plus seven is eleven; four plus seven equals eleven; four plus seven is equal to eleven
$12 > 5 + 5$	twelve is greater than five plus five
$5 + 5 < 12$	five plus five is less than twelve
$y = \sum_{k=0}^{4} a_k x^k$	*y* equals the sum from *k* equal to zero to *k* equal to four of *a* sub *k*, *x* to the power of *k*
$c - b = a$	*c* minus *b* is *a;* *c* minus *b* equals *a;* *c* minus *b* is equal to *a;* *c* minus *b* leaves *a*
$(2x - y)$	bracket two *x* minus *y* close the bracket
$18 - 6 = 12$	eighteen minus six is equal to twelve; eighteen minus six equals twelve; eighteen minus six is twelve; eighteen minus six leaves twelve
$1 \times 1 = 1$	once one is one
$2 \times 2 = 4$	twice two is four
$5 \times 5 = 25$	five times five is twenty five; five multiplied by five equals twenty five; five by five is equal to twenty five; five times five makes twenty five
$\prod_{i=1}^{n} 1 = 1$	the product from *i* equal to one to *n* of one equals one
$A \times B$	the Cartesian product of *A* and *B*
$S = v \cdot t$	distance = velocity × time; *S* equals *v* by *t;* *S* is equal to *v* multiplied by *t;* *S* equals *v* times *t*, where *S* means distance, *v* means velocity, *t* means time
$A = F \cdot S$	work = force ×distance; work is equal to the product of the force times distance; *A* equals *F* multiplied by *S* where *A* means work, *F* means force and *S* means distance
$16 : 4 = 4$	sixteen divided by four is four; sixteen by four equals four; sixteen by four is equal to four; the ratio of sixteen to four is four

20 : 5 = 16 : 4 $\frac{20}{5} = \frac{16}{4}$	the ratio of twenty to five equals (is equal to) the ratio of sixteen to four
1 : 2	the ratio of one to two
2 : 3 = 4 : 6	two to three is as four to six
1/2	a (one) half
1/3	a (one) third
1/4	a (one) quarter; a (one) fourth
1/8	one eighth
2/3	two thirds
3/4	three quarters; three fourths
5/6	five sixths
25/57	twenty-five fifty-sevenths
1/273	one two hundred and seventy third
2 ½	two and a half
3 ¾	three and three quarters
1.1	one point one
2.12	two point one two
15.505	fifteen point five o [ou] five
0.5 .5	o [ou] point five; zero point five; nought point five; point five; one half
0.002 .002	o [ou] point o [ou] o [ou] two; zero point zero zero two; point two oes[ouz] two; point two noughts two
0.0000001 .0000001	o [ou] point six noughts one
sin 30.2°= .5030	the sine of thirty point two degrees equals zero point five, zero, three, zero
12%	twelve percent
87	eighty-seven
101	one hundred (and) one
211	two hundred (and) eleven
1,024	one thousand (and) twenty-four
3,728	three thousand seven hundred (and) twenty-eight
100,000	one hundred thousand

1,048,576	one million forty-eight thousand five hundred (and) seventy-six
1,000,000,000	one billion
a^n a^n	*a* to the *n*-th power; *a* to the power of *n;* the *n*-th power of *a;* *a* raised to the *n*-th power
x^2 x^2	*x* square; *x* squared; the square of *x;* the second power of *x;* *x* to the second power; *x* raised to the second power
$4^2 = 16$	four squared is sixteen; the square of four is sixteen; the second power of four is sixteen
$(a+b)^2$	*a* plus *b* all squared
y^3 y^3	*y* cube; *y* cubed; the cube of *y;* the third power of *y*; *y* raised to the third power; *y* to the third power
$3^3 = 27$	three cube is twenty seven; the cube of three is twenty seven
a^5	*a* to the fifth power; *a* raised to the fifth power
y^{-10}	*y* to the minus tenth power
$\sqrt{16} = 4$	the square root of sixteen is four
$\sqrt{a}$	the square root of *a*
$\sqrt[3]{a}$	the cube root of *a*
$\sqrt[3]{27} = 3$	the cube root of twenty seven is three
$\sqrt[4]{16} = 2$	the fourth root of sixteen is two
$\sqrt[5]{a^2}$	the fifth root of *a* square
$\alpha = \sqrt{R^2 + x^2}$	alpha equals the square root of capital *R* square plus *x* square
$\sqrt{\dfrac{7_1 + A}{2xa''}}$	the square root of seven first plus capital *A* divided by two *xa* double prime
$\dfrac{x \pm \sqrt{x^2 - y^2}}{y}$	*x* plus or minus the square root of *x* square minus *y* square all over *y*
$a^{\frac{m}{n}} = \sqrt[n]{a^m}$	*a* to the *m* by *n*-th power equals the *n*-th root of (out of) *a* to the *m*-th power

$\dfrac{a+b}{a-b}=\dfrac{c+d}{c-d}$	*a* plus *b* over *a* minus *b* is equal to *c* plus *d* over *c* minus *d*
$a=\dfrac{e}{l}$	*a* is equal to the ratio of *e* to *l*
$\dfrac{ab^2}{b}=ab$	*ab* square (divided) by *b* equals *ab*
$\dfrac{a}{\infty}=0$	*a* divided by infinity is infinitely small; *a* by infinity is equal to zero
$L=\sqrt{R^2 \pm x^2}$	capital *L* equals the square root out of capital *R* square plus minus *x* square
$E=\dfrac{\frac{P}{a}}{\frac{e}{l}}=\dfrac{Pl}{al}$	capita1 *E* is equa1 to the ratio of capita1 *P* divided by *a* to *e* divided by *l* is equal to the ratio of the product of capital *P* and *l* to the product of *al*
$\gamma=\dfrac{c'c}{ac'}$	gamma is equal to the ratio of the segment *c* prime *c* to the segment *ac* prime
$\dfrac{dz}{dx}$	*dz* over *dx;* the first derivative of *z* with respect to *x*
$\dfrac{d^2y}{dx^2}$	the second derivative of *y* with respect to *x* square*;* *d* two *y* over *d x* square
$\dfrac{d^ny}{dx^n}, \quad D^n x^y$	the *n*-th derivative of *y* with respect to *x*
$\int_n^m$	the integra1 from *n* to *m;* the integral between the limits *n* and *m*
$\dfrac{d}{dx}\int_{x_0}^{x} X dx$	*d* over *dx* of the integral from *x* nought to *x* of capital *X dx*
$\int \dfrac{dy}{\sqrt{c^2-y^2}}$	the integral of *dy* divided by the square root out of *c* square minus *y* square
$\log_2 x = 2$	the logarithm of *x* to the base two equals two
$H[D]$	set of functions holomorphic in *D* (function spaces)
$\Vert f \Vert$	norm of *f* (function spaces)
$y = f(x)$	*y* is the value of the function corresponding to *x*; *y* is a function of *x*; *y* equals *f* of *x*
f^{-1}	the inverse function of the function *f*
$\vert v \vert$	the norm of *v* (vectors)
v^2	the norm square of *v* (vectors)
$u = v$	*u* is defined as *v* (vectors)
u dot *v*	the vector dot product of *u* and *v* (vectors)
u cross *v*	means the vector cross product of *u* and *v* (vectors)

v/r	means the scalar vector quotent of *v* and *r* (vectors)
rv	means the scalar vector product of *r* and *v* (vectors)
$d(S1, S2)$	distance between the sets *S*1and *S*2 (curves, domains, regions)
$x(z1, z2)$	chordal distance of *z*1 and *z*2 (curves, domains, regions)
$x(z1, z2)$	Euclidean distance of *z*1 and *z*2 (curves, domains, regions)
C is a "scroc"	*C* is a simple closed rectifiable oriented curve
$b = I(a + bi)$	*b* is the imaginary part of *a* plus *bi* (complex variables)
$a = R(a + bi)$	*a* is the real part of *a* plus *bi* (complex variables)
$F = C_{\mu}\ HIL \sin\theta$	capital *F* equals capital *C* sub (suffix) mu HIL sine theta
$P_{cr} = \dfrac{\pi^2 El}{4l^2}$	capital *P* sub (suffix) *cr* (critical) equals pi square capital *E* by *l* all over four *l* square
$f : A \to B$	*f* is a function under which each element of set *A* has an image in set *B*
Int (*s*)	the interior of *S* (set theory)
C(*S*)	the complement of *S*
S'	the derived set of a given set *S*
S	closure of the set *S*
$C \cup D$	the union of sets *C* and *D;* *C* unions *D*; *C* cup *D*
$C \cap D$	the intersection of sets *C* and *D;* *C* intersects *D;* *C* cap *D*
$a \in A$	small *a* is an element of the set capital *A*; *a* belongs to *A*
$A \subset B$	*A* is a proper subset of *B*
$A \not\subset B$	*A* is not a subset of *B*
$B \supset A$	*B* is a proper superset of *A*
$A \subseteq B$	*A* is a subset of *B;* *A* is included in *B*
$B \supseteq A$	*B* is a superset of *A;* *B* includes *A*
$M = \{2,4,6\}$	*M* is the set with the elements 2, 4, 6
$M = \varnothing$	*M* is an empty set; *M* is a null set
P(A)	probability of the event *A*

$P(A \mid B)$	probability of the event *A* conditional on the event *B*
$\lim\limits_{x \to x_1} f(x) = L$	*f* of *x* approaches the limit *L* as *x* tends to the value *x* first in any way
$V - u\sqrt{sin^2 i - cos^2 i} = u$	*V* equals *u* the square root of sine square *I* minus cosine square *I* equals *u*
$K = max\sum\limits_{i=1}^{n}\lvert a_{ij}(t)\rvert(t \in [a,b]);$ $j = 1,2...n)$	*K* is equal to the maximum over *j* of the sum from *I* equa1s one to *I* equa1s *n* of the modulus of *a* sub *ij* of *t*, where *t* lies in the c1osed interval *ab* and where *j* runs from one to *n*
$u = \int f_1(x)\,dx + \int f_2(y)\,dy$	*u* is equal to the integral of *f* sub one of *x* multiplied by *dx* plus the integral of *f* sub two of *y* multiplied by *dy*
$(D - r_1)[(D - r_2)y] =$ $= (D - r_2)[(D - r_1)y]$	open round brackets capital *D* minus *r* first close the round brackets open square and round brackets capital *D* minus *r* second close round brackets by *y* close square brackets equals open round brackets capital *D* minus *r* second close round brackets open square and round brackets capital D minus *r* first close round brackets by *y* close square brackets
$\left[(x + a)^p - \sqrt[r]{x}\right]^{-q} - s = 0$	*x* plus *a* in round brackets to the power of *p* minus the *r*-th root of *x* (all in square brackets) to the minus *q*-th power minus *s* equals nothing (zero)
$M = R_1x - P_1(x - a_1) - P_2(x - a_2)$	capital *M* is equal to capital *R* sub one multiplied by *x* minus capital *P* sub one round brackets opened *x* minus *a* sub one brackets closed minus capital *P* sub two round brackets opened *x* minus *a* sub two brackets closed
$a_\upsilon = \dfrac{m\omega\omega^2\alpha^2}{\left[rp^2m^2 + R_2\left(R_1 + \dfrac{\omega^2\alpha^2}{rp}\right)\right]}$	*a* sub *v* is equal to *m* omega, omega square alpha square divided by square brackets *rp* square *m* square plus capital *R* second round brackets opened capital R first plus omega square alpha square divided by *rp* round and square brackets closed
$D'_{n-1}(x) = \prod\limits_{s=0}^{n}\left(1 - x_s^2\right)^{\varepsilon-1}$	*D* sub *n* minus one prime of *x* is equal to the product from *s* equal to zero to *n* of, parenthesis, one minus *x* sub *s*

squared, close parenthesis, to the power of epsilon minus one

$$K(t,x) = \frac{1}{2\pi i} \int_{\left|\omega - \frac{1}{2}\right| = \rho} \frac{K(t,z)}{\omega - \omega(x)} d\omega$$

K of *t* and *x* is equal to one over two pi *i*, times the integral of *K* of *t* and *z*, over omega minus omega of *x*, with respect to omega along curve of the modulus of omega minus one half, is equal to rho