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TABLES OF ABSCISSAE AND WEIGHTS FOR THE EVALUATION OF INTEGRALS OF THE FORM

$$\int_0^{\infty} x^a e^{-x} f(x) dx$$

YVAIN M. TREVE

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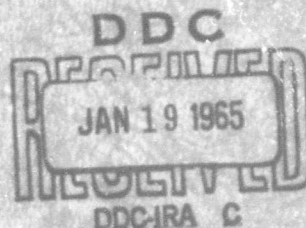
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FINAL REPORT - PART I

1 JULY 1964

PREPARED FOR

AIR FORCE CAMBRIDGE RESEARCH LABORATORIES
OFFICE OF AEROSPACE RESEARCH
UNITED STATES AIR FORCE
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$$\int_0^{\infty} x^a e^{-x} f(x) dx$$

Yvain M. Treve

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11 Carleton Street
Cambridge 42, Massachusetts

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FOREWORD

This document is part of the Final Report on Contract AF 19(628)-2388 (Contract Monitor - Lt. Ronald Finn, USAF).

The author wishes to acknowledge the help of Mrs. Shirley Gazarian of American Science and Engineering, Inc., who wrote the program for the IBM 1620 computer.

ABSTRACT

The abscissae and weights of the Gauss-Laguerre quadrature formula

$$\int_0^{\infty} x^a e^{-x} f(x) dx \sim \sum_{k=1}^n W_{k,n}^{(a)} f(x_{k,n}^{(a)})$$

are given to 18 places for $a = 3, 4, 5, 9/2, 11/2$ and $13/2$ and $n = 1(1)16$.

I. INTRODUCTION

Integrals of the form

$$\int_0^{\infty} x^a e^{-x} f(x) dx$$

occur in many areas of physics, for instance in the theories of metals (Reference 1) and of the thermal conductivity in a hydrogen plasma (References 2 and 3).

As is well known (see, for example, Reference 4) integrals of this form can be evaluated numerically using the approximation

$$\int_0^{\infty} x^a e^{-x} f(x) dx \sim \sum_{k=1}^n w_{k,n}^{(a)} f\left(x_{k,n}^{(a)}\right)$$

where $x_{k,n}^{(a)}$ is the k^{th} zero of the Laguerre polynomial

$$L_n^a(x) = \sum_{m=0}^n \binom{n+a}{n-m} \frac{(-x)^m}{m!},$$

and the coefficient is given by

$$W_{k,n}^{(a)} = \frac{\Gamma(n+a+1)}{n! \left[(n+1) L_{n+1}^a \left(x_{k,n}^{(a)} \right) \right]^2},$$

or, alternatively, by

$$W_{k,n}^{(a)} = \frac{\Gamma(n+a+1)}{n! x_{k,n}^{(a)} \left[\frac{d}{dx} L_n^a \left(x_{k,n}^{(a)} \right) \right]^2}.$$

In the accompanying tables the abscissae and weights are given to 18 significant digits for $a = 3, 4, 5, 9/2, 11/2$ and $13/2$ and $n = 1(1)16$.

These particular values of a are those needed for the evaluation of the associated Fermi-Dirac integrals

$$F_p(\eta, x) = \frac{1}{p!} \int \frac{e^{p\epsilon}}{(1+x e^{\epsilon^3})(1+e^{\epsilon-\eta})}$$

introduced by Wyller (Reference 3).

Tables for $a = 3, 4, 5$ to 18 significant figures have been published by Rabinowitz and Weiss (Reference 5) but only for $n = 4(4)16$.

II. METHOD OF CALCULATION

The calculations were done on the IBM 1620 computer carrying 28 decimal places.

The zeros of the Laguerre polynomials were obtained by the so-called "regula falsi" method using upper and lower bounds determined as follows:

The k^{th} zero ($k < n$) satisfies the well-known inequality

$$x_{k-1,n-1}^{(a)} < x_{k,n}^{(a)} < x_{k,n-1}^{(a)} .$$

The k^{th} zero also satisfies Szego's inequality (Reference 6) used by Rabinowitz and Weiss

$$A < x_{k,n}^{(a)} < B ,$$

where

$$A = \frac{j_{k,a}^2}{4n + 2(a+1)} ,$$

$$B = \frac{(2k+a+1)^2 + (2k+a+1) \left[(2k+a+1)^2 + \frac{1}{4} - a^2 \right]^{\frac{1}{2}}}{2n + a + 1} ,$$

and $j_{k,a}^2$ denotes the k^{th} zero of the Bessel function $J_a(x)$ (Reference 7).

For each zero ($k < n$) the bounds were taken as

$$m = \max \left(x_{k-1,n-1}^{(a)}, A \right)$$

and

$$M = \min \left(x_{k,n-1}^{(a)}, B \right) .$$

Once the $n-1$ first zeros were computed, an upper bound for the n^{th} zero was obtained by adding a very small number to the first approximation

$$x_{n,n}^{(a)} \approx \frac{\binom{n+a}{n} n!}{\prod_{k=1}^{n-1} x_{k,n}^{(a)}} .$$

In all cases the sum

$$\sum_{k=1}^n x_{k,n}^{(a)} = n(n+a)$$

and the product

$$\prod_{k=1}^n x_{k,n}^{(a)} = \binom{n+a}{n} n!$$

were found correct to 24 places.

In order to test the overall accuracy of the tables the equalities

$$\int_0^{\infty} x^a x^{2n-1} e^{-x} dx = U_{a,n} = V_{a,n}$$

were used where

$$U_{a,n} = \Gamma(a+2n)$$

and

$$V_{a,n} = \sum_{k=1}^n W_{k,n}^{(a)} \left[x_{k,n}^{(a)} \right]^{2n-1}.$$

In all cases $U_{a,n}$ and $V_{a,n}$ were found to agree within at least 18 decimal places.

Some of the numbers given in Reference 5 have been found to be in error by one unit in the last place. A table of errata is given in the Annex.

ABSCISSAE AND WEIGHT COEFFICIENTS OF THE GAUSS-LAGUERRE QUADRATURE FORMULA
REF ASE 1620 S031 PROGRAMMER S.A. GAZARIAN AUG 63

X	W	W · EXP(X)
A = 3.0, N = 1		
.40000000000000 E+01	.6000000000000000000E+01	.327588900198865434E+03
A = 3.0, N = 2		
.276393202250021030E+01	.434164078649987362E+01	.688674994455453318E+02
.723606797749978970E+01	.165835921350012618E+01	.230283595309001348E+04
A = 3.0, N = 3		
.214121627671772412E+01	.283632820467072531E+01	.241365335287251204E+02
.531551712617678671E+01	.295129431271570455E+01	.600498984470644907E+03
.105432665971054892E+02	.212377482613570142E-00	.805361701240741752E+04
A = 3.0, N = 4		
.175552164718549145E+01	.186033407414649995E+01	.107647588421845741E+02
.426560586565682345E+01	.335689101902892032E+01	.239037661575137080E+03
.805794068313800185E+01	.764453972843517610E-00	.241474077829377203E+04
.139209318040196833E+02	.183209339810621145E-01	.203578296138366883E+05
A = 3.0, N = 5		
.149055494518682816E+01	.125098361334456567E+01	.555381499298726424E+01
.358133381290325400E+01	.323855718889259622E+01	.116333577391862970E+03
.662699629682360784E+01	.139018524407220366E+01	.104988226070608593E+04
.109444180034676693E+02	.119041172838379236E-00	.674213654171986125E+04
.173566969416186407E+02	.123278085225520487E-02	.425405975580652754E+05
A = 3.0, N = 6		
.129641920344426546E+01	.865313492258471696E-00	.316374288680619731E+01
.309399838075573331E+01	.290127512655521253E+01	.640170029981409283E+02
.566128522041150077E+01	.189314531191889462E+01	.544313219585479850E+03
.916709726951423954E+01	.326801881941696982E-00	.312971151700936603E+04
.139413453745210428E+02	.133944145439720300E-01	.151905361395015973E+05
.208398545513532181E+02	.697727817521417523E-04	.784006879258233241E+05
A = 3.0, N = 7		
.114770009087479938E+01	.614853616753921873E-00	.193736544061650960E+01
.272708351406060446E+01	.250740866125975070E+01	.383338503898046888E+02
.495546872067536908E+01	.221456237895379232E+01	.314355192553245334E+03
.793648260857236546E+01	.608765090281587186E-00	.170302232984951125E+04
.118455142525478554E+02	.532078508929577179E-01	.742022702608937147E+04
.170256192151280484E+02	.119892852525019625E-02	.297115815050832237E+05
.243621315981407578E+02	.347333274000397457E-05	.132155642525962935E+06

X

W

W. EXP(X)

A = 3.0, N = 8

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 .243991423401425973E+01
 .441318676383851689E+01
 .701921044285466378E+01
 .103653585615970610E+02
 .146343284911153273E+02
 .201808472740399451E+02
 .279171925451893479E+02

.447659268688580562E-00
 .212957515366677356E+01
 .237008143827449573E+01
 .913728082731325425E-00
 .132197368598833373E-00
 .666810091481878879E-02
 .904305893787150415E-04
 .156535793848369390E-06

.125387504291512878E+01
 .244306070979065246E+02
 .195607691717435238E+03
 .102145993175804680E+04
 .419605176057880639E+04
 .151220362170062521E+05
 .525709678492352907E+05
 .208399336850716077E+06

A = 3.0, N = 9

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 .398175149326313524E+01
 .630327980490335462E+01
 .924483778425155379E+01
 .129185460161026054E+02
 .175135343512623049E+02
 .233949925443042737E+02
 .315001280611076416E+02

.333080655243422506E-00
 .179482838760196818E+01
 .239949863129644345E+01
 .119955937719738133E+01
 .250700969065251229E-00
 .216402678129793793E-01
 .685737530933156990E-03
 .596773657196397626E-05
 .651504880669042308E-08

.847877181194761949E-00
 .163379109621889013E+02
 .128639163808820462E+03
 .655392379272390707E+03
 .259500410078827808E+04
 .882502369561140274E+04
 .276814762168091542E+05
 .863228579513449341E+05
 .312068166763398390E+06

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 .201799142724430666E+01
 .362944401204659626E+01
 .572623820488119858E+01
 .835712787221015791E+01
 .116031523159970717E+02
 .155746098512299418E+02
 .204682976933565091E+02
 .266589473078661074E+02
 .351070718953318523E+02

.252647915341244404E-00
 .150924750863028842E+01
 .234301229709901214E+01
 .144105096792900993E+01
 .399972304570319663E-00
 .511520938920665392E-01
 .285619681157997313E-02
 .603618145123611198E-04
 .353657944743112483E-06
 .254021827532977352E-09

.594140783396557720E-00
 .113543691297084948E+02
 .883124787657460726E+02
 .442133066016473566E+03
 .170746979104021407E+04
 .559820038290800409E+04
 .165865188340731268E+05
 .467768560314689700E+05
 .133787989642680612E+06
 .448413455662944602E+06

A = 3.0, N = 11

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 .524983672350641309E+01
 .763762872985507978E+01
 .105524888087917080E+02
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 .183174140731837338E+02
 .234872961910025387E+02
 .299656438580042196E+02
 .387349293714614805E+02

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 .983006372182398075E-01
 .831471274604216887E-02
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 .937792961886987826E-11

.428837409.27670632E-00
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 .627563074096633072E+02
 .310149574561698131E+03
 .117653957914692844E+04
 .376221831317634946E+04
 .107505366943283753E+05
 .286662441661874085E+05
 .743052427332442428E+05
 .198034881325623641E+06
 .622978490351613016E+06

X

W

W. EXP(X)

A = 3.0, N = 12

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 .172200587771537790E+01
 .308711820886747629E+01
 .484907183643667852E+01
 .703654192274923744E+01
 .968900419917576858E+01
 .128619916279440914E+02
 .166361029842912300E+02
 .211344882654905403E+02
 .265616764973530448E+02
 .333094793553748032E+02
 .423811857710775980E+02

.152730239391842707E-00
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 .209369597825120887E+01
 .175927719487292856E+01
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 .190887802863997279E-01
 .112749487761940805E-02
 .307769783328946458E-04
 .327387146853583194E-06
 .965351819752401242E-09
 .330506360143886766E-12

.317350448025970021E-00
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 .458809098751416806E+02
 .224522264593643932E+03
 .840432710605229296E+03
 .263937440838205532E+04
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 .189270227412433568E+05
 .464320234766113947E+05
 .112370201079018605E+06
 .282363592457219416E+06
 .841579093496417165E+06

A = 3.0, N = 13

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 .287354335273481033E+01
 .450678828811285140E+01
 .652690165286948918E+01
 .896410947285507633E+01
 .118596716044250142E+02
 .152710678946218724E+02
 .192811534855460892E+02
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 .296843736523931994E+02
 .366859309601956164E+02
 .460437696156255158E+02

.121299624418938484E-00
 .907416866937887602E-00
 .194089834447264502E+01
 .184063076477742607E+01
 .904546575133018052E-00
 .244948369641077733E-00
 .370561124211652890E-01
 .306889171525076843E-02
 .131775789701837125E-03
 .265369900972596075E-05
 .209482758997923363E-07
 .455923323956979127E-10
 .111912904918641929E-13

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 .343531694187907884E+02
 .166816867336595351E+03
 .618056681000578854E+03
 .191486355045652465E+04
 .524143000188244108E+04
 .131559460598220254E+05
 .311554616623070377E+05
 .714264301466380449E+05
 .163270589627092519E+06
 .390291586886480432E+06
 .111028695938531983E+07

A = 3.0, N = 14

.638999729929841214E-00
 .150244644749581630E+01
 .268804875232865645E+01
 .421076491104702664E+01
 .608862398962494081E+01
 .834537622613993682E+01
 .110126953174461324E+02
 .141333778298155741E+02
 .177665966617289824E+02
 .219972198389758947E+02
 .269539547616186728E+02
 .328496515470028075E+02
 .400912903921911220E+02
 .497209535946545959E+02

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 .771550022860058386E-00
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 .105621581082971842E+01
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 .365966857442279317E-15

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 .105359484724894260E+06
 .229490386610870907E+06
 .525541334052538561E+06
 .143541519041392802E+07

X

W

W. EXP(X)

A = 3.0, N = 15

.601090769391830652E-00
 .141256662842113300E+01
 .252536617346937869E+01
 .395202888061556286E+01
 .570726412802627590E+01
 .781013010530620778E+01
 .102855762901384617E+02
 .131665272183921489E+02
 .164971101390925928E+02
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 .247758774775438184E+02
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 .534112815850374484E+02

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 .658923036560905332E-00
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 .116059913159875946E-16

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 .204147549631768305E+02
 .980304194649921847E+02
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 .706954491212779785E+04
 .160458321993911106E+05
 .346768601819168336E+05
 .726200180500402233E+05
 .150101628818316347E+06
 .313689467580937891E+06
 .692029355967687382E+06
 .182350561538052337E+07

A = 3.0, N = 16

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 .133290773275989334E+01
 .238148248007005849E+01
 .372382664209342697E+01
 .537212395216187100E+01
 .734193662826135234E+01
 .965333213726122905E+01
 .123323014070182379E+02
 .154128500654077155E+02
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.650981121009449315E-01
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 .148989313857906502E+01
 .186124704489653487E+01
 .130047554848272360E+01
 .547819646856915096E-00
 .143843043208105701E-00
 .237498472421622760E-01
 .244244469350610863E-02
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 .256137300941415792E+05
 .523686431947102649E+05
 .104639104770985089E+06
 .207677073163230993E+06
 .418695241024345828E+06
 .893856486144031607E+06
 .228131757123540439E+07

X

W

W. EXP(X)

A = 4.0, N = 1

.50000000000000	E+01	.24000000000000000000E+02	.356191581846163848E+04
-----------------	------	---------------------------	-------------------------

A = 4.0, N = 2

.355051025721682190E+01		.168989794855663562E+02	.588609803834886597E+03
.844948974278317810E+01		.710102051443364380E+01	.331808523117278453E+05

A = 4.0, N = 3

.279649607579349694E+01		.105545904376571539E+02	.172959411896317231E+03
.631824409083983492E+01		.124515647450873406E+02	.690561679834654486E+04
.118852598333666681E+02		.993844817255505564E-00	.144218621107804579E+06

A = 4.0, N = 4

.231915524835569955E+01		.657222031198722368E+01	.668203029533717859E+02
.512867199360117916E+01		.137936031844206074E+02	.232826105813133801E+04
.920089134897243093E+01		.354028469036795246E+01	.350699000772320934E+05
.153512814090706904E+02		.938918132242164933E-01	.436118522676941444E+06

A = 4.0, N = 5

.198586813868332923E+01		.418560095829913802E+01	.304936489406298872E+02
.434171198024554392E+01		.128767710780312107E+02	.989437872978081504E+03
.763199752000545911E+01		.632598029834290008E+01	.130515545790826940E+05
.121882021398553864E+02		.604750050882541519E-00	.118807770794727756E+06
.188522202212102813E+02		.689761444420971998E-02	.106197459784235088E+07

A = 4.0, N = 6

.173857955732966635E+01		.274136229770243446E+01	.155963130459651163E+02
.377474291103658858E+01		.111234274053232254E+02	.484829058579126842E+03
.656139452332503479E+01		.842135852413230768E+01	.595606724165114364E+04
.102776456834135395E+02		.163909533726591169E+01	.476572548048371014E+05
.152619048425688903E+02		.743321717710180562E-01	.315746015148076374E+06
.223857324823262805E+02		.424263805102757073E-03	.223684593750711337E+07

A = 4.0, N = 7

.154721852391226098E+01		.184598908162197419E+01	.867316473356718037E+01
.334390340174818902E+01		.925353925195566362E+01	.262148071344891738E+03
.577202740611233374E+01		.959796989636018965E+01	.308275517391803928E+04
.894329314375742251E+01		.300292248651725241E+01	.229914829638122807E+05
.130383931025613429E+02		.292325160321573325E-00	.134390439388876362E+06
.184069302711191897E+02		.723128221025205783E-02	.713252916716590691E+06
.259482341507892611E+02		.228410130947403567E-04	.424512291602414775E+07

X

W

W. EXP(X)

A = 4.0, N = 8

.139445874535841327E+01
 .300412262031589098E+01
 .516118127238140954E+01
 .794175644134279969E+01
 .114570496332457916E+02
 .158935676714650236E+02
 .216116099676724373E+02
 .295362536480182341E+02

.127551104534833669E+01
 .755971394358976204E+01
 .998706281698755810E+01
 .442018619472331421E+01
 .717052700563446937E-00
 .398824021635586082E-01
 .589788576623485837E-03
 .110804739994015747E-05

.514386973811936581E+01
 .152468188096643766E+03
 .174144726764228389E+04
 .124308710943862802E+05
 .678085582369019424E+05
 .318617808357226932E+06
 .143383544036118813E+07
 .744715365181727400E+07

A = 4.0, N = 9

.126954420743900656E+01
 .272864658615683677E+01
 .467225977451162110E+01
 .715552202589393470E+01
 .102530946150212749E+02
 .140797042709427147E+02
 .188275873595124612E+02
 .248668996403836611E+02
 .331467415201384891E+02

.902175788267852265E-00
 .612834169905298696E+01
 .981826666421324321E+01
 .567925831585169184E+01
 .133936815361653172E+01
 .128107883182777499E-00
 .443956041214112215E-02
 .418859787575655357E-04
 .494240178247068848E-07

.321105106056874931E+01
 .938380831484607159E+02
 .104995687462832605E+04
 .727604461851719087E+04
 .379981438182899018E+05
 .166845203811877144E+06
 .666894702953107102E+06
 .264013396324048399E+07
 .122852778416801396E+08

A = 4.0, N = 10

.116541582492040296E+01
 .250045058477532388E+01
 .427095122601025287E+01
 .651869140679359966E+01
 .929686789019637338E+01
 .126824729164721583E+02
 .167938555485864676E+02
 .218285049645959167E+02
 .281656926220182055E+02
 .367770970156312992E+02

.651674572479509247E-00
 .495838957021556289E+01
 .930327674474011256E+01
 .666789239598033795E+01
 .210085471595910511E+01
 .299154834313225525E-00
 .183336816098265396E-01
 .420823090078659967E-03
 .265955527194405911E-05
 .205696957456213429E-08

.209008735404726253E+01
 .604327749484782321E+02
 .666018802588711901E+03
 .451877055253904236E+04
 .229073284894596889E+05
 .963438572587355790E+05
 .360353280113522315E+06
 .127086323280961020E+07
 .453956151099192964E+07
 .192893752686256466E+08

A = 4.0, N = 11

.107723576575400579E+01
 .230812453335196759E+01
 .393502188657434738E+01
 .599069123355734385E+01
 .851471717651272265E+01
 .115619190316198155E+02
 .152118136811597583E+02
 .195860664996999350E+02
 .248869754932539856E+02
 .315023157481530910E+02
 .404251189503630274E+02

.479702388569069069E-00
 .401739991793854164E+01
 .860216605084250343E+01
 .735431702490080652E+01
 .292428997637688285E+01
 .567050701661263583E-00
 .528391285506756406E-01
 .219965513069135749E-02
 .350020333933164526E-04
 .153915408513643409E-06
 .807640930930840498E-10

.140867053210874382E+01
 .403971581690924631E+02
 .440114941948257978E+03
 .293945281212589806E+04
 .145852917365919299E+05
 .595524355556888773E+05
 .213482553026839667E+06
 .705464556388664910E+06
 .225096842354146188E+07
 .738863130966686455E+07
 .290820094435685798E+08

X

W

W. EXP(X)

A = 4.0, N = 12

.100157108495383152E+01
 .214370613511225703E+01
 .364933321432680176E+01
 .554486813974946731E+01
 .786076259241096344E+01
 .106377654649934495E+02
 .139325683951155931E+02
 .178270063100842237E+02
 .224457538203894399E+02
 .279955513560437942E+02
 .348721707324949280E+02
 .440889427543252506E+02

.359159548108807725E-00
 .326582820687688745E+01
 .782396142854537168E+01
 .775650688373216668E+01
 .373730972528196261E+01
 .929328933322615071E-00
 .119937171658365840E-00
 .773699187701495750E-02
 .228490954516935571E-03
 .261140180598097782E-05
 .823746583872488555E-08
 .301723739243414224E-11

.977831924001506432E-00
 .278607678171097753E+02
 .300823651354474138E+03
 .198505168139673751E+04
 .969270306643015021E+04
 .387339956748239464E+05
 .134831503047832052E+06
 .427309561007931643E+06
 .127919289421063792E+07
 .375999417306024579E+07
 .114970110208989482E+08
 .423832281907530249E+08

A = 4.0, N = 13

.935914936252759635E-00
 .200145559944052506E+01
 .340317315145260753E+01
 .516285180544144933E+01
 .730454413803204888E+01
 .985955103285476488E+01
 .128700691680927454E+02
 .163945211033538359E+02
 .205168319315694774E+02
 .253644293618528406E+02
 .311481973929371484E+02
 .382714783077962950E+02
 .477669820709235021E+02

.273055741182508486E-00
 .266662991269997840E+01
 .703756076661515523E+01
 .791670241194313647E+01
 .448438856694007605E+01
 .136987334401045549E+01
 .229938460283908021E-00
 .208583928506094355E-01
 .971183029749531515E-03
 .210423360726526712E-04
 .177695929167710924E-06
 .412313086959919874E-09
 .107975092296572293E-12

.696167916622770075E-00
 .197325798579707190E+02
 .211544373353146111E+03
 .138274587050878147E+04
 .666847379114828922E+04
 .262197787428335457E+05
 .893329427174232139E+05
 .274998858690167315E+06
 .790037996617598292E+06
 .218135154114508309E+07
 .598642750569493069E+07
 .172313364782743852E+08
 .600150696602548405E+08

A = 4.0, N = 14

.878392177414747493E-00
 .187712299127220342E+01
 .318872376963617217E+01
 .483150054355273232E+01
 .682486506112701433E+01
 .919349265266743858E+01
 .119698370450418474E+02
 .151974470961809920E+02
 .189363006203656683E+02
 .232722190857831022E+02
 .283351754821944884E+02
 .343399508037141380E+02
 .416970932954210256E+02
 .514578793756284297E+02

.210488665587807490E-00
 .218832715370189114E+01
 .628343304071857006E+01
 .788471366224127802E+01
 .512977942215936054E+01
 .186442190945329844E+01
 .389142797674676715E-00
 .464977063399600135E-01
 .308674952602933621E-02
 .107132079193969524E-03
 .174932639112157917E-05
 .111720657140366646E-07
 .194737310452295684E-10
 .372144767086085369E-14

.506651800639625185E-00
 .143000121434279012E+02
 .152420060213164236E+03
 .988735099639388204E+03
 .472171670790594727E+04
 .183327377671676062E+05
 .614530121353640259E+05
 .185182073759321621E+06
 .516930619020900306E+06
 .137061621142994719E+07
 .353737582804936465E+07
 .915766230189892094E+07
 .250188127787198679E+08
 .829058124908964886E+08

X

W

W. EXP(X)

A = 4.0, N = 15

.827571128200017987E-00	.164310233962838903E-00	.375901612239966494E-00
.176748990661235522E+01	.180536820536343821E+01	.105724807487666628E+02
.300013215145946346E+01	.558311895257624928E+01	.112154762304750754E+03
.454112825637746541E+01	.770859140960500284E+01	.723039410758358413E+03
.640642834575423439E+01	.565542184400407229E+01	.342563813174961426E+04
.861589872604263595E+01	.238602732799695735E+01	.131677837860234222E+05
.111951525225178081E+02	.598847348470582850E-00	.435821946010547270E+05
.141777342402115907E+02	.899488241391174022E-01	.129213305549474717E+06
.176084064870341319E+02	.795639542805688064E-02	.353142617419537555E+06
.215485490842826983E+02	.398740237850588298E-03	.910135436045804105E+06
.260857222626012969E+02	.105844140381870239E-04	.225710651968552757E+07
.313522747454166918E+02	.133145204944578575E-06	.550104816581939888E+07
.375666776932663756E+02	.655716024275129226E-09	.135430543900981693E+08
.451463688156464314E+02	.874134494846454279E-12	.353506263548469293E+08
.551604656345768030E+02	.124078498290811880E-15	.112094001542294896E+09

A = 4.0, N = 16

.782339164085635910E-00	.129739702663052232E-00	.283686376560111066E-00
.167007183671874001E+01	.149748665808338508E+01	.795547187624795022E+01
.283292171947257737E+01	.494612614281207374E+01	.840596269993120727E+02
.428441836819021891E+01	.743026705086785796E+01	.539142636980744193E+03
.603786871096889479E+01	.605687666231872829E+01	.253782571556701110E+04
.810954933413974021E+01	.290916131357755320E+01	.967609960197269259E+04
.105201017048502218E+02	.855584651819837666E-00	.317018863503759819E+05
.132960399123563184E+02	.156009598652813630E-00	.928000231797978033E+05
.164718887086961996E+02	.175191359650891542E-01	.249553149851783729E+06
.200934999730530394E+02	.118227257300007126E-02	.629816124368594188E+06
.242235299428062549E+02	.458506311659349061E-04	.151876543553876336E+07
.289511495806519383E+02	.950616079827638761E-06	.355901373314319768E+07
.344109430408020216E+02	.938309759503402079E-08	.825712602731401404E+07
.408248952713820481E+02	.362281000770432509E-10	.194568396347320977E+08
.486170549734729113E+02	.375119190628700090E-13	.487851881245905146E+08
.588737277583532394E+02	.401670675392835967E-17	.148732275042273460E+09

X

W

W. EXP(X)

A = 4.5, N = 1

.5500000000000000 E+01	.523427777845535202E+02	.128078554361791097E+05
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A = 4.5, N = 2

.395049024320360758E+01	.364366521737801952E+02	.189327883648392551E+04
.904950975679639242E+01	.159061256107733249E+02	.135430524077105328E+06

A = 4.5, N = 3

.313369731465407695E+01	.223246472030294339E+02	.512545064826669016E+03
.681931638846263177E+01	.277094324180235988E+02	.253640796273217737E+05
.125469862968830913E+02	.230869816350048744E+01	.649312959165995398E+06

A = 4.5, N = 4

.261181053832367453E+01	.135911100151745240E+02	.185161134258252442E+03
.556339219301824189E+01	.303401536605395879E+02	.790985106229631495E+04
.97689233980960467E+01	.818487050924000903E+01	.143040019968984480E+06
.160562049288484789E+02	.226643599599395268E-00	.213041720141910779E+07

A = 4.5, N = 5

.224486761505588708E+01	.845078396637176533E+01	.797683515926223011E+02
.472712862381662567E+01	.279118123904758630E+02	.315321739634069368E+04
.813405138334194201E+01	.145090750155269551E+02	.494553588449848967E+05
.128044876383740699E+02	.145381325094927881E+01	.528965013234245899E+06
.195894647394114754E+02	.172931612296579001E-01	.556507254828240665E+07

A = 4.5, N = 6

.197110461006476335E+01	.540176227278791750E+01	.387770996511845868E+02
.412157366970533825E+01	.237204140165802106E+02	.146251041142999943E+04
.701316749217981562E+01	.191167994492582838E+02	.212419864070069106E+05
.108303184691451128E+02	.391706204918671360E+01	.197928347862607996E+06
.159156056289997998E+02	.185636745770231783E-00	.151608533692741092E+07
.231482301299051702E+02	.110325097016286662E-02	.124687503416919379E+08

A = 4.5, N = 7

.175830789214974370E+01	.355053658950912333E+01	.206023606816622801E+02
.365951468241607530E+01	.193951457067768090E+02	.753355701846971432E+03
.618348313597933349E+01	.215303684250428043E+02	.104352790342631156E+05
.944617510523636843E+01	.712133001670984435E+01	.901535505991385314E+05
.136309214845109419E+02	.726604076245807112E-00	.604131963293649738E+06
.190905115936364134E+02	.187314685235011159E-01	.365995435109752032E+07
.267310861060711238E+02	.615017456309836986E-04	.250063689093138461E+08

X

W

W. EXP(X)

A = 4.5, N = 8

.158780543643437310E+01
 .329386360036355699E+01
 .553935518243513015E+01
 .840399165593650967E+01
 .120009076687643912E+02
 .165184732225318122E+02
 .223196981708335181E+02
 .303359050627007086E+02

.239572305811077555E+01
 .155668588655567360E+02
 .221159408676445414E+02
 .103881319713910855E+02
 .177164160086228499E+01
 .102896529622771310E-00
 .158180739200086637E-02
 .308397132456922606E-05

.117222708617094319E+02
 .419476633330696709E+03
 .562881284846860250E+04
 .463814861810419384E+05
 .288604998110134497E+06
 .153561553725782440E+07
 .780684135555651281E+07
 .461133319405438731E+08

A = 4.5, N = 9

.144794535832078418E+01
 .299655326000505047E+01
 .502238223179003903E+01
 .758368904459058998E+01
 .107566661978877340E+02
 .146573244617605661E+02
 .194794123529549950E+02
 .255955056400263007E+02
 .339605214526639405E+02

.165573008194460418E+01
 .123962780027661189E+02
 .214496550243807094E+02
 .132144158499876912E+02
 .328580698998777309E+01
 .328910824537999464E-00
 .118647625363451584E-01
 .116106461501579526E-03
 .141950777164583559E-06

.704407900855424312E+01
 .248129187157107574E+03
 .325546627833301869E+04
 .259777943367578041E+05
 .154242062027256621E+06
 .763261400116508120E+06
 .342026964626270205E+07
 .151650291886206288E+08
 .796168230663735202E+08

A = 4.5, N = 10

.133104565797689393E+01
 .274965687352296007E+01
 .459705069571494833E+01
 .691776479603333062E+01
 .976626628535533417E+01
 .132205181338232033E+02
 .173998701397476907E+02
 .225031220084587036E+02
 .289117627606283634E+02
 .376029426487385718E+02

.116940952477664143E+01
 .985302665591165354E+01
 .200436632028747971E+02
 .153499924264053277E+02
 .511305652582804908E+01
 .763662612586356377E-00
 .487965048622911250E-01
 .116271863148468041E-02
 .760659018883155630E-05
 .608673035910178179E-08

.442621403806367044E+01
 .154074392848827473E+03
 .198815777903968320E+04
 .155044099705926837E+05
 .891489331854444653E+05
 .421210901077739770E+06
 .175815153234425900E+07
 .689376294911756567E+07
 .273784620127974319E+08
 .130357060487881088E+09

A = 4.5, N = 11

.123182035564621136E+01
 .254111956455277185E+01
 .424028374732377171E+01
 .636456172493598749E+01
 .895462422667780721E+01
 .120660673598538243E+02
 .157791400952769821E+02
 .202163513117610434E+02
 .255811762258117239E+02
 .322634543856281526E+02
 .412614010025317240E+02

.642267456652068675E-00
 .784400720874120722E+01
 .162735771181535389E+02
 .167425836675726074E+02
 .705606099210916952E+01
 .143816016620744036E+01
 .139964907509848143E-00
 .605601155595772524E-02
 .998023178896984963E-04
 .453487932862002149E-06
 .245859667070109597E-09

.288684059658014115E+01
 .995708441082399068E+02
 .126868966941137411E+04
 .972560248781415717E+04
 .546394369435294676E+05
 .250053955155220837E+06
 .997269722880006542E+06
 .364784615584500725E+07
 .128500347841919143E+08
 .466021487700853550E+08
 .204308323537346378E+09

X

W

W. EXP(X)

A = 4.5, N = 12

.114650505680272675E+01	.617467800985599775E-00	.194327889961113614E+01
.236250366909986334E+01	.626713058849499682E+01	.665412647388789824E+02
.393632854098254270E+01	.163867667949417753E+02	.839496785414914537E+03
.589665514554770473E+01	.174571845853813440E+02	.635124689197665415E+04
.827488354872816669E+01	.893606069320423491E+01	.350656887355732168E+05
.111124079218003937E+02	.234030866937403885E+01	.156794412619533772E+06
.144664905598418105E+02	.315986744987392952E-00	.605878983142408837E+06
.184195689135816879E+02	.212147650273561997E-01	.211911909149275370E+07
.230970603227486335E+02	.649445818047043376E-03	.697378848302089812E+07
.287067560321734757E+02	.767136383941814242E-05	.224942412184990090E+08
.356464601945389345E+02	.249654587673532575E-07	.755788906382320747E+08
.449343500941520601E+02	.943617128115187393E-11	.308699630181665982E+09

A = 4.5, N = 13

.107234207903213267E+01	.459968664672984173E-00	.134412758503466760E+01
.220771008294070685E+01	.503108147717140836E+01	.457570120735354590E+02
.367401212226004117E+01	.145330386258839916E+02	.572742774444759630E+03
.549510492276503015E+01	.176116511240757621E+02	.428838550304836207E+04
.769588220474897540E+01	.106213837527374527E+02	.233593242517089880E+05
.103081950424324522E+02	.342370369005821152E+01	.102633324363614250E+06
.133747042576609209E+02	.602205832930401262E-00	.387529897925022399E+06
.169542929363526504E+02	.569317600192634544E-01	.13134318714620636E+07
.211314072347961956E+02	.275068163685966816E-02	.413707967642423175E+07
.260341467548027641E+02	.616370912910786588E-04	.124832713944190222E+08
.318744022752129202E+02	.536991904177354793E-06	.373976885366488335E+08
.390573573451043556E+02	.128364359796869900E-08	.117717012526864159E+09
.486204427418708548E+02	.346479963398269631E-12	.452134987547584288E+09

A = 4.5, N = 14

.100726271967456263E+01	.347654472122952503E-00	.951911254137884566E-00
.207221160187358589E+01	.406057889613440924E+01	.322506162174703774E+02
.344516256737527350E+01	.127951286450886262E+02	.401106545397936863E+03
.514633626005631245E+01	.173359926688904913E+02	.297833917826452777E+04
.719589955319385323E+01	.120325775015954279E+02	.160508536874051162E+05
.961900594535449670E+01	.462287711885404332E+01	.695654426672040099E+05
.124484981140589835E+02	.101266978118056157E+01	.258096365825271038E+06
.157282935521360620E+02	.126272498453830311E-00	.855105841091340491E+06
.195187622562145753E+02	.870806515850743220E-02	.261103330481908996E+07
.239061904879633538E+02	.312830030360798801E-03	.754457967121563713E+07
.290211701047542362E+02	.527229954025682950E-05	.211706460433366500E+08
.350794295290654300E+02	.346825566939590153E-07	.595543895911394993E+08
.424932723661241930E+02	.622004715559554744E-10	.177168857190016819E+09
.523185049421550819E+02	.122385098400091087E-13	.644713165900560481E+09

X

W

W. EXP(X)

A = 4.5, N = 15

.949683412567958882E-00	.266260494061085945E-00	.688254404198858732E-00
.195257208409172206E+01	.329594252701744621E+01	.232258122875772177E+02
.324364976887127513E+01	.112125394835584062E+02	.287344693465698514E+03
.484032633745624005E+01	.167507357171912305E+02	.211914613108531069E+04
.675923645625121075E+01	.131351224842209744E+02	.113222625576765346E+05
.902066812690433701E+01	.586779064968951574E+01	.485401374006424735E+05
.116505676142006160E+02	.154790503791735246E+01	.177632136595854429E+06
.146827843425684997E+02	.242940713842626708E-00	.578299107716958180E+06
.181623908672572126E+02	.223481455986467938E-01	.172610664297736396E+07
.221511125067399260E+02	.116030651125392757E-02	.483814253761044115E+07
.267369328456691742E+02	.318105587066283383E-04	.130098921044923901E+08
.320527779463549542E+02	.412294945113694846E-06	.343204206370100228E+08
.383180172816015213E+02	.208846782680615468E-08	.914389545826877053E+08
.459517694291611606E+02	.286120310726033639E-11	.258909856966647725E+09
.560275109803041916E+02	.417742396073340153E-15	.898146965554664744E+09

A = 4.5, N = 16

.898370596740330408E-00	.206398501283932595E-00	.506831889190242377E-00
.184613343672318029E+01	.269078478354111837E+01	.170468652220640213E+02
.306477653844221718E+01	.979632812765567472E+01	.209974965214398320E+03
.456949190884108425E+01	.159577192439478446E+02	.153984121990819308E+04
.637421205166767381E+01	.139277871954219538E+02	.816896890697237942E+04
.849558977970090180E+01	.709427382756037300E+01	.347132846354289498E+05
.109545566707213726E+02	.219601783909459402E+01	.125643312433252669E+06
.137778851876496008E+02	.418924526461643294E-00	.403455180860383036E+06
.170003537921281811E+02	.489761614837141103E-01	.118343548279270356E+07
.206680845288207106E+02	.342723603990944822E-02	.324323993124193018E+07
.248440451025661488E+02	.137376056481339561E-03	.846335857759298258E+07
.296177978750263064E+02	.293607450072785741E-05	.214098317573228430E+08
.351244706900622337E+02	.298134089134400048E-07	.535519682184480880E+08
.415869051622520566E+02	.118245565825960829E-09	.136065585624018545E+09
.494307652579473915E+02	.125690622207969100E-12	.368818039503841642E+09
.597465614207106102E+02	.138307813628486186E-16	.122588195918587082E+10

X

W

W. EXP(X)

A = 5.0, N = 1

.6000000000000000	E+01	.12000000000000000000E+03	.484114552191282147E+05
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A = 5.0, N = 2

.435424868893540941E+01		.826778683805536336E+02	.643302811513305105E+04
.964575131106459059E+01		.373221316194463664E+02	.576850147907631760E+06

A = 5.0, N = 3

.347639550948005660E+01		.497800194852109454E+02	.161003178150021479E+04
.732024622675363490E+01		.646247417726760600E+02	.976205754083834834E+05
.132033582637663085E+02		.559523674211299455E+01	.303364151266082720E+07

A = 5.0, N = 4

.291078636936770048E+01		.296843923155522145E+02	.545339079699888520E+03
.6000000000000000 E+01		.700000000000000000E+02	.282400155444914586E+05
.103341103467862578E+02		.197469504802402056E+02	.607501194316356380E+06
.167551032838460418E+02		.568657204207579951E-00	.107522522732126438E+08

A = 5.0, N = 5

.251055856466921628E+01		.180527437348515566E+02	.222261862015318452E+03
.511565653616761007E+01		.635256770677670028E+02	.105840213565288345E+05
.863587462564526459E+01		.347433138832303475E+02	.195606794542744044E+06
.134174678822920284E+02		.363334627180136820E+01	.244027658145056855E+07
.203204423912258806E+02		.449190423497249746E-01	.300252401090449092E+08

A = 5.0, N = 6

.221044596540372537E+01		.112806772674034420E+02	.102877324189618139E+03
.447227525090435623E+01		.531672378452179467E+02	.465509513922222250E+04
.746600134289003110E+01		.453344429908182861E+02	.792266821894426306E+05
.113814657299493009E+02		.973429151591255444E+01	.853516872077292914E+06
.165653749219007236E+02		.480386424608522572E-00	.751348883314708910E+07
.239044367889518628E+02		.296395603924819609E-02	.713570271682786590E+08

A = 5.0, N = 7

.197619941121531945E+01		.724858484196244983E+01	.523004861697796443E+02
.397947042544848260E+01		.427728236316566433E+02	.228786275153994638E+04
.659688363406068369E+01		.504882840266961363E+02	.369982148792089010E+05
.994877660188570828E+01		.175682532796491297E+02	.367643899482178798E+06
.142211132428711510E+02		.187174860404436132E+01	.280800919640963577E+07
.197698200477681370E+02		.501349447107245480E-01	.193225435720970688E+08
.275077366367505179E+02		.170671280554953136E-03	.150875484597989962E+09

X

W

W. EXP(X)

A = 5.0, N = 8

.178786047157082745E+01	.478286518603309507E+01	.285855186820191489E+02
.358823885764338782E+01	.337613267971511042E+02	.122115795065788180E+04
.592009002612269490E+01	.512313725300345871E+02	.190808809485486296E+05
.886684640118214593E+01	.254081265226598562E+02	.180216730854013967E+06
.125435889444281568E+02	.453758896116486575E+01	.127185211458041413E+07
.171405288833306908E+02	.274338524361631772E-00	.762647046314642504E+07
.230233426297284257E+02	.437283100034351893E-02	.436187637191007580E+08
.311295037859936706E+02	.882759451633260886E-05	.291886557731016559E+09

A = 5.0, N = 9

.163291575558432162E+01	.323397780416029721E+01	.165540147160969942E+02
.326926232091247953E+01	.264345655629980683E+02	.695015937047528738E+03
.537549884169596135E+01	.490527157720786582E+02	.105977224477851981E+05
.801313920708252302E+01	.320142695079993366E+02	.966953827985777797E+05
.112599309443416280E+02	.835864421470503616E+01	.649025433072678548E+06
.152331600257315324E+02	.872809047754157851E-00	.36024385444333605E+07
.201280642345797031E+02	.326866364068335987E-01	.180250907788546813E+08
.263196019621102776E+02	.331035382290079963E-03	.891933166189273649E+08
.347684267079615734E+02	.418515322012021716E-06	.526559225353091385E+09

A = 5.0, N = 10

.150308088840805219E+01	.223589781870364861E+01	.100515187692169217E+02
.300375140414004960E+01	.206592969370311555E+02	.416512651584659893E+03
.492644895542593001E+01	.452337235293227205E+02	.623723254045398470E+04
.731861690439015068E+01	.368106274661362962E+02	.555147204396864564E+05
.102360230043456948E+02	.129079542553562886E+02	.360002672721270757E+06
.137575997606614858E+02	.201527602134746119E+01	.190188475729877031E+07
.180036846235281507E+02	.133897069718586985E-00	.882413124019600482E+07
.231743674121684231E+02	.330454846179891099E-02	.383364605693700170E+08
.29653322999996826E+02	.223354632275107201E-04	.168759998546399062E+09
.384231040469323804E+02	.184588160357508457E-07	.897730347742043522E+09

A = 5.0, N = 11

.139263428163133752E+01	.15773699452108327E+01	.634960845300404382E+01
.277903231532763092E+01	.161736059856713976E+02	.260450537710867578E+03
.454905672838315341E+01	.406873566680215786E+02	.384671234302563751E+04
.674058388282190526E+01	.397241189501481139E+02	.336087731079820778E+05
.939540497075919263E+01	.176662576208981025E+02	.212577401172987946E+06
.125698966039745209E+02	.377155810099469262E+01	.108531932394755101E+07
.163450324113188888E+02	.382287023997135347E-00	.479674840414465280E+07
.208441520374898825E+02	.171521623815127216E-01	.193561549194960067E+08
.262718903784628550E+02	.292172408155997516E-03	.750544109211648764E+08
.330201243392563220E+02	.136950289552854687E-05	.299930579839108840E+09
.420921920505743111E+02	.765931914396923981E-09	.146082066759074916E+10

X

W

W. EXP(X)

A = 5.0, N = 12

.129748784000685508E+01
 .258620943634406719E+01
 .422697995386950259E+01
 .625087547037452540E+01
 .869028125595059872E+01
 .115872437894981120E+02
 .149995922575396278E+02
 .190103582323823253E+02
 .237456904925278601E+02
 .294144761288863084E+02
 .364163482053466644E+02
 .457744569372755530E+02

.113334726805127857E+01
 .127102752975832523E+02
 .359951248234067119E+02
 .409672458660868638E+02
 .221781320782776474E+02
 .609556014277879247E+01
 .858547769806400297E-00
 .598481941810913418E-01
 .189538249456284785E-02
 .230998625486114025E-04
 .774406887601347796E-07
 .301616108514055821E-10

.414815342846979275E+01
 .168784065874957923E+03
 .246602657834341949E+04
 .212401457309494012E+05
 .131845757933745044E+06
 .656583037728656770E+06
 .280546343478958590E+07
 .107930634493047940E+08
 .389331206067960144E+08
 .137452950475636027E+09
 .506277099810570424E+09
 .228585454857795443E+10

A = 5.0, N = 13

.121463784835844499E+01
 .241883630868756584E+01
 .394860234662755508E+01
 .583000395693440952E+01
 .808881427344092220E+01
 .107574438893735638E+02
 .138790165448210848E+02
 .175128702416864407E+02
 .217439643553841006E+02
 .267010606382668400E+02
 .325970438019000459E+02
 .398389181841519135E+02
 .494687876103651130E+02

.827957847794344029E-00
 .100388233350647443E+02
 .314938090142901106E+02
 .408703046861909235E+02
 .261217815170513225E+02
 .885242191548877873E+01
 .162682164112337872E+01
 .159893214924524820E-00
 .800008654464559809E-02
 .185076461574401400E-03
 .166097959661670741E-05
 .408492115974319356E-08
 .113501480158043579E-11

.278945103271358420E+01
 .112763896165977660E+03
 .163335805970985593E+04
 .139106179595458049E+05
 .851001247614292972E+05
 .415872904162002459E+06
 .173348560950518718E+07
 .645019646761497088E+07
 .222013007197085072E+08
 .730254906977417004E+08
 .238276135123035347E+09
 .818476117022063462E+09
 .345957707651828547E+10

A = 5.0, N = 14

.114182499804106750E+01
 .227211680989437492E+01
 .370541060302827890E+01
 .546397757978190199E+01
 .756877875619544030E+01
 .100454567394785217E+02
 .129272437656500809E+02
 .162584222972790823E+02
 .200997488561100597E+02
 .245379675793577484E+02
 .297042808245043700E+02
 .358153533164721696E+02
 .432852259305604495E+02
 .531741919436464542E+02

.614073017377863905E-00
 .797402126121684775E+01
 .273567434675567903E+02
 .397790553843864058E+02
 .293165573795102489E+02
 .118616865767933460E+02
 .271878514810982809E+01
 .352898013875649957E-00
 .252289244907337366E-01
 .936451399095026750E-03
 .162650196569317743E-04
 .110060651411377303E-06
 .202841150340760046E-09
 .410449937737260154E-13

.192357139729061452E+01
 .773473042562661933E+02
 .111250962244300195E+04
 .938922568304391935E+04
 .567795333191711125E+05
 .273421634127173231E+06
 .111842071673686594E+07
 .406061956013243752E+07
 .135241118151506883E+08
 .424804549934661959E+08
 .129318257319338090E+09
 .394495807111730640E+09
 .127553046079559408E+10
 .502766298131923630E+10

X

W

W. EXP(X)

A = 5.0, N = 15

•107731561252376673E+01	•461768393422644222E-00	•135611471766265372E+01
•214240297004237276E+01	•637204076222041257E+01	•542890614011452047E+02
•349100663599672395E+01	•236552745610035756E+02	•776341695021795292E+03
•514244873164399617E+01	•380031304512534452E+02	•650363979924052141E+04
•711408774493273824E+01	•316989762288379725E+02	•389631703789030636E+05
•942664544214225235E+01	•149367511828489741E+02	•185436936924665612E+06
•121064031910042864E+02	•412866653413035414E+01	•747401402659635126E+06
•151875130940719639E+02	•675359175269448223E-00	•266310282349202421E+07
•187153535127032903E+02	•644719465599025209E-01	•865656392029322576E+07
•227519901070160206E+02	•346158665647262327E-02	•263232322042990853E+08
•273858238230748154E+02	•978638764328926951E-04	•765833893679476346E+08
•327503508462423723E+02	•130511911304914289E-05	•218246256296159024E+09
•390658292304363597E+02	•679169916482412256E-08	•628134296149435807E+09
•467530422880753206E+02	•955174123341081853E-11	•192606449858884240E+10
•568897867700937205E+02	•143292882877439906E-14	•729701251562179626E+10

A = 5.0, N = 16

•101975621006729237E+01	•351651938860095021E-00	•974961600786600683E-00
•202686733891905119E+01	•512310712750064588E+01	•388857731425075226E+02
•330047946506096635E+01	•204008497899245159E+02	•553386139750131562E+03
•485757645713809794E+01	•357964501907962966E+02	•460742858155172212E+04
•671275559761595590E+01	•332890537160876807E+02	•273913958593091107E+05
•888305877614446853E+01	•179120868308842187E+02	•129124780054447953E+06
•113897106617410895E+02	•581751150687781879E+01	•514310915694565138E+06
•142597409258898484E+02	•115803031442409197E+01	•180570468896330916E+07
•175281737111426743E+02	•140641304118632739E-00	•576108359319635733E+07
•212414122811650920E+02	•101865573672515247E-01	•171023416056506905E+08
•254627162726269377E+02	•421355482124525535E-03	•481909868948838928E+08
•302820392701258409E+02	•927055945773008095E-05	•131349522839105173E+09
•358350465381012185E+02	•967230928638172189E-07	•353584440429819067E+09
•423454277633176611E+02	•393647895812592163E-09	•967149353332157447E+09
•502404476674638389E+02	•429130683419748560E-12	•282968933922063744E+10
•606147860634799664E+02	•464789662852962661E-16	•102381299844288556E+11

X

W

W. EXP(X)

A = 5.5, N = 1

.650000000000000000 E+01	.287885277815044361E+03	.191484483815328399E+06
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A = 5.5, N = 2

.476138721247416943E+01	.196503059118502633E+03	.229727776087267557E+05
.102386127875258306E+02	.913822186965417200E+02	.255525786779806282E+07

A = 5.5, N = 3

.382406554036604200E+01	.116439380034864849E+03	.533175821847401968E+04
.782106025463432284E+01	.157343078433046148E+03	.392184977491199341E+06
.138548742049996352E+02	.141028193471333637E+02	.146690286723955000E+08

A = 5.5, N = 4

.321553039598963116E+01	.681197513440145413E+02	.169730605826168387E+04
.643834542411234462E+01	.168726831838154556E+03	.105516904535727288E+06
.108976465085930614E+02	.495595087885271303E+02	.267864239164343188E+07
.174484776713049628E+02	.147918584434813388E+01	.559500285247292348E+08

A = 5.5, N = 5

.278240155163839469E+01	.405829827282577772E+02	.655730830746500935E+03
.550705874616882698E+01	.151184369752273945E+03	.372556477556573737E+05
.913750415049008001E+01	.865818659386909195E+02	.804997574928605367E+06
.140274116171578321E+02	.941543662250240459E+01	.116377205655747809E+08
.210456239345448602E+02	.120622773319315124E-00	.166505142954360373E+09

A = 5.5, N = 6

.245609305919788063E+01	.248274737730141190E+02	.289467756015234923E+03
.482656965906105619E+01	.124730324070685122E+03	.155641217773897703E+05
.791983717466370893E+01	.111944139768583661E+03	.307994489165058517E+06
.119312160019079506E+02	.250897909139865366E+02	.381204759332742720E+07
.172115010391309909E+02	.128533749840453216E+01	.383598680297963980E+08
.246547830660384127E+02	.821179037038971021E-02	.418672168959626799E+09

A = 5.5, N = 7

.220041674818495421E+01	.156172774028793244E+02	.141004890674554756E+03
.430347640375169707E+01	.98822544238497125E+02	.730856306671569897E+04
.701211318160367047E+01	.123353268151508780E+03	.136921838372730270E+06
.104511368877565576E+02	.449671054842069706E+02	.155512754226962840E+07
.148091398396757564E+02	.498621713076072849E+01	.134678695314374168E+08
.204451414456459254E+02	.138397849907731698E-00	.104795215415621004E+09
.282785754933814389E+02	.487371931112971401E-03	.931300436259000867E+09

X

W

W. EXP(X)

A = 5.5, N = 8

.199418232438274163E+01
 .388695163920717946E+01
 .630323665814699662E+01
 .933030164985447645E+01
 .130851861383347536E+02
 .177599235094033861E+02
 .237228166905823263E+02
 .319174013900881398E+02

.100897201051667423E+02
 .767793284184932854E+02
 .123725079390425028E+03
 .645029992261005815E+02
 .120212093417092858E+02
 .754474585858199173E-00
 .124407951058687536E-01
 .259521853697580633E-04

.741210389563228879E+02
 .374391480368623420E+04
 .675956330879099600E+05
 .727241124583996453E+06
 .579124975363453007E+07
 .389656023794051104E+08
 .249767841937755258E+09
 .188679725178299255E+10

A = 5.5, N = 9

.182404712946713451E+01
 .354648209131349782E+01
 .573144152763498620E+01
 .844381502047588851E+01
 .117629270394310657E+02
 .158073316897204518E+02
 .207737356646601596E+02
 .270394453998159681E+02
 .355707744374808477E+02

.668227588320962948E+01
 .591607002073455523E+02
 .117021894177963263E+03
 .805373081764546214E+02
 .219999760973426302E+02
 .238947013574711884E+01
 .926823881452606874E-01
 .969483651643176565E-03
 .126518464206546822E-05

.414093110473558604E+02
 .205234755331666115E+04
 .360911360233688505E+05
 .374196205752489029E+06
 .282485729517475315E+07
 .175121122938819459E+08
 .974801038974657373E+08
 .536565099473444624E+09
 .355095334813614771E+10

A = 5.5, N = 10

.168114408939018193E+01
 .326245169990364022E+01
 .525896817035462483E+01
 .772116484554980866E+01
 .107061379696489951E+02
 .142937894553966069E+02
 .186054331298459230E+02
 .238424304216902332E+02
 .303906123933462806E+02
 .392378678248737056E+02

.452725624062433609E+01
 .454982183999063861E+02
 .106554876441762153E+03
 .917038034839503133E+02
 .337254804187790544E+02
 .548773018611453183E+01
 .378197506968951974E-00
 .964782577625288672E-02
 .672538505421926649E-04
 .573118390101260492E-07

.243190540163307931E+02
 .118811686826890447E+04
 .204886897743762864E+05
 .206845765727027513E+06
 .150513268764017859E+07
 .885332967132501446E+07
 .454941550501845493E+08
 .218305873002328354E+09
 .106216605624740314E+10
 .629555209791751453E+10

A = 5.5, N = 11

.155932828997554618E+01
 .302159161186453876E+01
 .486115911497167014E+01
 .711865824744324124E+01
 .983703224151336606E+01
 .130734425241571763E+02
 .169095812951136949E+02
 .214696076571150042E+02
 .269593000547840263E+02
 .337725471598254704E+02
 .429177518032362655E+02

.313136954782749831E+01
 .350541791948170757E+02
 .946186332310608058E+02
 .979550710901455799E+02
 .457919646467356731E+02
 .102083267002850709E+02
 .107494428351679004E+01
 .499077167386124706E-01
 .877166715254417188E-03
 .423476230538697332E-05
 .243969501956961873E-08

.148916217187301953E+02
 .719449584343577239E+03
 .122222524455083560E+05
 .120954190589471696E+06
 .856955158876981496E+06
 .486047270031285301E+07
 .237204979821869501E+08
 .105268839590662326E+09
 .448081892008943999E+09
 .196815777414709144E+10
 .106237617713981816E+11

X

W

W. EXP(X)

A = 5.5, N = 12

.145419571745847270E+01
 .281456447553594503E+01
 .452110564287668002E+01
 .660741913131413501E+01
 .910690931694849962E+01
 .120622822900321536E+02
 .155319313811409448E+02
 .195994750038651727E+02
 .243917831536225086E+02
 .301187948287790034E+02
 .371820397231582416E+02
 .466094993352682428E+02

.220705782058025465E+01
 .271153541412791141E+02
 .826266913396070711E+02
 .999607383375012080E+02
 .570043952217807188E+02
 .163899187269475749E+02
 .240190712768311601E+01
 .173470486044155321E-00
 .567314176133829586E-02
 .712261268932402087E-04
 .245634461689236437E-06
 .984548961168244993E-10

.944850041917607855E+01
 .452444279557539608E+03
 .759646594516500801E+04
 .740278478419327150E+05
 .514030402213981099E+06
 .283896107366746462E+07
 .133655951823344902E+08
 .563857598998797900E+08
 .222351704659420204E+09
 .857167556542692344E+09
 .345337685892374096E+10
 .171983064756926890E+11

A = 5.5, N = 13

.136250159165848408E+01
 .263458773319970387E+01
 .422676434658215684E+01
 .616743260252978073E+01
 .848328033933136757E+01
 .112072870472722965E+02
 .143830389417159595E+02
 .180703242329875578E+02
 .223546085288695933E+02
 .273653067809819319E+02
 .333162855546773571E+02
 .406163503830273355E+02
 .503122319171664753E+02

.158250104352870769E+01
 .210847477862825339E+02
 .713598426112826597E+02
 .986576087279653803E+02
 .665536394957475061E+02
 .236351203000413778E+02
 .452593380786768502E+01
 .461444984238572648E-00
 .238647072202727684E-01
 .569083786414799913E-03
 .525380262162402384E-05
 .132768357280501711E-07
 .379299182415245602E-11

.618117341307723653E+01
 .293870048749333846E+03
 .488780999951081435E+04
 .470557317695642132E+05
 .321672289180415205E+06
 .174108806664706994E+07
 .798330356197209098E+07
 .325058876739638091E+08
 .121966128890597772E+09
 .436292696511141694E+09
 .154722233762761239E+10
 .578830528182423586E+10
 .268724089728219480E+11

A = 5.5, N = 14

.128179916785407875E+01
 .247660428341325348E+01
 .396929226473223103E+01
 .578430481507964688E+01
 .794343313256084650E+01
 .104728197650933664E+02
 .134060877215987834E+02
 .167878815087311114E+02
 .206793392241976115E+02
 .251676566047563172E+02
 .303846387297819249E+02
 .365478760841045857E+02
 .440731294192944143E+02
 .540251372788018284E+02

.115258776672320938E+01
 .164930977449947365E+02
 .611879973567220446E+02
 .949848246287935737E+02
 .740212300357665221E+02
 .314354575907446670E+02
 .751859229190687548E+01
 .101359175019718271E+01
 .749761658983904216E-01
 .287081127536447813E-02
 .513146115003337335E-04
 .356735280187306020E-06
 .674873840606519727E-09
 .140289788219741214E-12

.415290801013194011E+01
 .196280794365086744E+03
 .323972365471424022E+04
 .308848778513246308E+05
 .208518923645985926E+06
 .111098352946784687E+07
 .499259636886133840E+07
 .198037469886515553E+08
 .717540043085415883E+08
 .244443801548922695E+09
 .805604679453040372E+09
 .266003267048383914E+10
 .933124304554289429E+10
 .407234969330273829E+11

X

W

W. EXP(X)

A = 5.5, N = 15

.121020666127807620E+01	.851578206088344355E-00	.285634501483089700E+01
.233676000423302551E+01	.129827503424198629E+02	.134341032274127781E+03
.374203194611844218E+01	.522329960035366812E+02	.220337674930122774E+04
.544737443625412505E+01	.897576754018618873E+02	.208370510130726487E+05
.747090612555717507E+01	.793021004166215390E+02	.139270134641957522E+06
.983379439523127051E+01	.392814178162029520E+02	.732739825551237991E+06
.125626581526370872E+02	.113452906698102219E+02	.324122172238013869E+07
.156919505515885716E+02	.192977344991153085E+01	.126018371159900928E+08
.192673522139080163E+02	.190806505802041402E-00	.444936389001087814E+08
.233512645230308794E+02	.105767482887198243E-01	.146445994191700879E+09
.280325002745084285E+02	.307912037566053205E-03	.460030737749925087E+09
.334451190058261835E+02	.421989570205260773E-05	.141361891618843569E+10
.398102580719170435E+02	.225348060837261819E-07	.438762223842900907E+10
.475503499452285821E+02	.325010363194594594E-10	.145462753031277609E+11
.577474736926830933E+02	.500484463659736298E-14	.600896630839251680E+11

A = 5.5, N = 16

.114625190341676318E+01	.637501499488210754E-00	.200582059953305658E+01
.221206219048126913E+01	.102852505988121579E+02	.939509726595514124E+02
.353986503766658735E+01	.444771907139742923E+02	.153278485599378305E+04
.514855114946352709E+01	.836261038410800982E+02	.143988967452832776E+05
.705341891685195572E+01	.825059386751581784E+02	.954434487648907723E+05
.927191186041843848E+01	.467351546328910001E+02	.497031417697824982E+06
.118255510920195256E+02	.158805589846215853E+02	.217088775981661445E+07
.147416228431322956E+02	.329084951987845162E+01	.830832504300292102E+07
.180554044165470434E+02	.414365980199016244E-00	.287572000687079609E+08
.218135468067884318E+02	.310113521250981358E-01	.922621798294599529E+08
.260796274520287530E+02	.152179527941026270E-02	.280157652061242188E+09
.309439763469392640E+02	.299000241355141431E-04	.821239281785116783E+09
.365427902485352418E+02	.320175463182960976E-06	.237530949482992150E+10
.431005986765017010E+02	.133577067406354172E-08	.698367590314305735E+10
.510462530542876066E+02	.149200883623892719E-11	.220230476532444126E+11
.614785680049185962E+02	.172885881032740140E-15	.866088689987169651E+11

X

W

W. EXP(X)

A = 6.5, N = 1

.7500000000000000 E+01	.187125430579778835E+04	.338330715311593768E+07
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A = 6.5, N = 2

.558452405257734976E+01	.125654461878504245E+04	.334584559158443598E+06
.114154759474226502E+02	.614709687012745900E+03	.557632746424340587E+08

A = 6.5, N = 3

.453260014835796585E+01	.723830754938942535E+03	.673163043152668476E+05
.882241790179500133E+01	.104769789755888482E+04	.710826293813281143E+07
.151449819498470328E+02	.997256532999609896E+02	.376867753964216814E+09

A = 6.5, N = 4

.384048420156209052E+01	.409230889651876417E+03	.190488825625075484E+05
.731973712561540317E+01	.110328597191730098E+04	.166574891429377074E+07
.120194367771847174E+02	.547683443864476658E+03	.576977767138940152E+08
.188203418956377889E+02	.110540003641342927E+02	.164850438751200548E+10

A = 6.5, N = 5

.334272458826581067E+01	.234908144142421143E+03	.664698834095126877E+04
.629767423574712968E+01	.965969456931630165E+03	.524817809266621590E+06
.101402939915101441E+02	.599558341332677351E+03	.151951564114704318E+08
.152390968619352774E+02	.698644552414870889E+02	.290076103719281867E+09
.224802103225416382E+02	.953908149572598400E-00	.552761585984048332E+10

A = 6.5, N = 6

.296456438167043649E+01	.138275677937816035E+03	.268064774544293444E+04
.554497739410828268E+01	.776316860267777624E+03	.198697362771142010E+06
.883029901105047852E+01	.762192238533942673E+03	.521212300065491078E+07
.130269563234043339E+02	.184305721854305320E+03	.837672128411518229E+08
.184938137219127991E+02	.100951155887758487E+02	.108610682992157684E+10
.261393891678536693E+02	.686916151708456519E-01	.154559677946701436E+11

A = 6.5, N = 7

.266619094602385209E+01	.836539412452846235E+02	.120336790029089848E+04
.496261598527083084E+01	.598019085241639266E+03	.854971784531171495E+05
.784764562114851320E+01	.823534524648584194E+03	.210800139691560593E+07
.114552571930240296E+02	.326054038656082175E+03	.307782959748712526E+08
.159792855533073086E+02	.388389012732784041E+02	.338051195446223389E+09
.217848178591005019E+02	.114970794649827137E+01	.332363802187127681E+10
.298041868421249638E+02	.430678642141290782E-02	.378396593712303624E+11

X

W

W. EXP(X)

A = 6.5, N = 8

.242409675971659393E+01	.519854991806246890E+02	.587021577148644069E+03
.449635103322527349E+01	.451253575263577063E+03	.404725993903462895E+05
.707623256010159344E+01	.808416587022181137E+03	.956762112979263927E+06
.102589338872665916E+02	.460601020856674091E+03	.131438705626553155E+08
.141654426301780424E+02	.926653578076261376E+02	.131489470051606508E+09
.189913872585240327E+02	.622286655524054383E+01	.110114669093172313E+10
.251102158075078102E+02	.109157254558358455E-00	.877567980040995633E+10
.334773400634800622E+02	.241857306327255817E-03	.836726011093654426E+11

A = 6.5, N = 9

.222336917892733647E+01	.331324220544472625E+02	.306090711293167296E+03
.411342674414581444E+01	.337506543186181271E+03	.206405247145469950E+05
.645120329820143180E+01	.747370655716615473E+03	.473432465276179898E+06
.930862814230229973E+01	.565377784378855546E+03	.623770132406130303E+07
.127682365874630362E+02	.167511528860805638E+03	.587786214149831929E+08
.169511021574916258E+02	.195384131810342519E+02	.449427267877246556E+09
.220568160132538603E+02	.807977227986883665E-00	.306586200801044838E+10
.284672862255164763E+02	.896878031496850884E-02	.206975389646836874E+11
.371599316526981190E+02	.124115470513182314E-04	.170678643540428822E+12

A = 6.5, N = 10

.205403102191107954E+01	.216164177766575571E+02	.168592427428546116E+03
.379266976391821846E+01	.251899789412003467E+03	.111779806782668223E+05
.593273056789359132E+01	.664616858978395687E+03	.250682202549171137E+06
.853104210048167678E+01	.632078318596554184E+03	.320446404204076836E+07
.116474306417349779E+02	.253262159142484186E+03	.289724459353128415E+08
.153637386561457939E+02	.444187130266003068E+02	.208906951227429396E+09
.198032042203327334E+02	.327267421499916133E+01	.130414263061512028E+10
.251696825985715466E+02	.887192933350356191E-01	.756958966480884409E+10
.318532352086039180E+02	.654766040638765095E-03	.446447534123868288E+11
.408522352204064640E+02	.590718123191923906E-06	.326047312508210253E+12

A = 6.5, N = 11

.190912607581599285E+01	.144095480691694519E+02	.972239541551071103E+02
.351968558136304013E+01	.188355100585504006E+03	.636146894266069382E+04
.549469699963535101E+01	.576078623274476402E+03	.140216249585197840E+06
.788059751883512389E+01	.662295535669382489E+03	.175207157622937932E+07
.107227177716970463E+02	.338743550415064883E+03	.153705070466774982E+08
.140798023910323384E+02	.816851522036168789E+02	.106395585123263466E+09
.180349662526763754E+02	.922230189469831155E+01	.627083913066022873E+09
.227139779446475792E+02	.455959081389911431E-00	.353796019516614969E+10
.283248592706251498E+02	.849127159008527026E-02	.169942817333339629E+11
.352654509451934349E+02	.433065250382021470E-04	.895661866539981143E+11
.445541192484785681E+02	.263708884263120039E-07	.589838201874815741E+12

X

W

W. EXP(X)

A = 6.5, N = 12

.178364147884791218E+01
 .328429775102658751E+01
 .511912219993828007E+01
 .732707172876141896E+01
 .994367878854848580E+01
 .130129902449019487E+02
 .165945222168260308E+02
 .207730484123475141E+02
 .256768540883639088E+02
 .315179437575726865E+02
 .387015775955721244E+02
 .482652517372931021E+02

.979657101335981986E+01
 .141433063877666562E+03
 .490923029717403795E+03
 .662542613941267944E+03
 .415010917616762968E+03
 .129511793042994836E+03
 .204078646364959586E+02
 .157312837549502962E+01
 .545965670743555846E-01
 .724374463881564453E-03
 .263368916718143802E-05
 .111402948102522383E-08

.583041868682874753E+02
 .377488164693746242E+04
 .820767080632119885E+05
 .100767535519900938E+07
 .864060892686674606E+07
 .580469188897172249E+08
 .328629838632718088E+09
 .165342485772600953E+10
 .773537511860502491E+10
 .353209346116447674E+11
 .169217824795612608E+12
 .101912904969296008E+13

A = 6.5, N = 13

.167386543334187182E+01
 .307908267699060024E+01
 .479315241211218888E+01
 .684945028234493490E+01
 .927658744525233236E+01
 .121087082738578367E+02
 .153903245886438470E+02
 .191821136174133487E+02
 .235705352393395367E+02
 .286862866116738396E+02
 .347451644485599727E+02
 .421595210803330999E+02
 .519852078901365905E+02

.678171544328804452E+01
 .106794079906391610E+03
 .413705900746602862E+03
 .640743020959067884E+03
 .476529223835033297E+03
 .184269574307127663E+03
 .380468897590166656E+02
 .414991413954249699E+01
 .228174033930034156E-00
 .575649216485263002E-02
 .560265919534556298E-04
 .148986133123258293E-06
 .448501108062919863E-10

.361651344698282046E+02
 .232153798685797672E+04
 .499265272561038640E+05
 .604452733880492427E+06
 .509167034438439693E+07
 .334348068657347382E+08
 .183760516802266624E+09
 .888638667123067980E+09
 .393386643485877426E+10
 .165368923628726269E+11
 .688695742766558941E+11
 .303943747075197088E+12
 .169298241697866364E+13

A = 6.5, N = 14

.157698630708009800E+01
 .289848354201640872E+01
 .450731736918222481E+01
 .643257544170131056E+01
 .869780555615004613E+01
 .113301811213538216E+02
 .143641117578991044E+02
 .178449594681889272E+02
 .218346129114807188E+02
 .264211543336376903E+02
 .317375729513223074E+02
 .38003281210C182701E+02
 .456374299762383983E+02
 .557135280537306738E+02

.477308609962691308E+01
 .811528735531638826E+02
 .346148086179905052E+03
 .604305458777941034E+03
 .520973842091204042E+03
 .241644135709560006E+03
 .624834649491839617E+02
 .903227507893937500E+01
 .711664487665647517E-00
 .288704130144772593E-01
 .544467988104684040E-03
 .398168167140711491E-05
 .791244935311673547E-08
 .173069483896780793E-11

.231033905504359054E+02
 .147264921630081830E+04
 .313880977476753248E+05
 .375740956046041792E+06
 .312050494964163277E+07
 .201284994455835899E+08
 .108148270529066912E+09
 .507884059727127098E+09
 .216235600584405333E+10
 .861022557506137517E+10
 .330693114468775405E+11
 .127257052420544585E+12
 .522871475396785107E+12
 .271830572435158384E+13

X

W

W. EXP(X)

A = 6.5, N = 15

.149083268616876329E+01	.341091671211084396E+01	.151471708488521540E+02
.273825001161844216E+01	.620860827938030535E+02	.959845050630118893E+03
.425446460751913264E+01	.288372113355835463E+03	.203069061971092907E+05
.606518854998527316E+01	.559316468429620919E+03	.240843830474305364E+06
.819015816103209124E+01	.548433837843572761E+03	.197726435743026187E+07
.106514657659559959E+02	.297554861361966301E+03	.125730272369783764E+08
.134764136632559920E+02	.931474553280739899E+02	.663594969029571480E+08
.167000540023313504E+02	.170269063860501947E+02	.304703223690628626E+09
.203686631656679885E+02	.179668342245755755E+01	.126028735057447259E+10
.245453019025464575E+02	.105683228669855189E-00	.482942299475916982E+10
.293195918117782313E+02	.324979685455425567E-02	.175870561235921230E+11
.348267003818221118E+02	.468755781654570165E-04	.625158925564941244E+11
.412894973518124759E+02	.262797137377516354E-06	.224606070882325807E+12
.491336688543125771E+02	.397486273894708242E-09	.866569491491889826E+12
.594497490841931171E+02	.643172700746312172E-13	.423667919841083431E+13

A = 6.5, N = 16

.141369933360181188E+01	.247191353922957284E+01	.101623721735439412E+02
.259507064178059166E+01	.478284320310867296E+02	.640783032519201013E+03
.402907883781976899E+01	.239686681038505143E+03	.134725749447532439E+05
.573872344459229730E+01	.510374272990034507E+03	.158556736901261285E+06
.774080266243247472E+01	.560522450540855910E+03	.128937989424917362E+07
.100535988869203080E+02	.348709700025893162E+03	.810375958209183722E+07
.126992368531097722E+02	.128739210032952280E+03	.421618180363699873E+08
.157055154208091106E+02	.287316098459782737E+02	.190186043213387036E+09
.191082022333414319E+02	.386814278718223512E+01	.769288581220380296E+09
.229544647848557234E+02	.307688318706422088E-00	.286489295732789331E+10
.273084750992589520E+02	.138703956275682971E-01	.100463636305924987E+11
.322613128160018721E+02	.330518714703442212E-03	.338927017706114920E+11
.379502211071324726E+02	.371675353357639006E-05	.112651084438457582E+12
.446013857329470650E+02	.162492984397054299E-07	.381039785651419704E+12
.526467910599107181E+02	.190051445608520403E-10	.139021517445759987E+13
.631934210854856294E+02	.231103875522598336E-14	.643222604899513479E+13

ANNEX

Errata to:

P. Rabinowitz and G. Weiss, "Tables of Abscissas and Weights
for Numerical Evaluation of Integrals of the Form $\int_0^{\infty} e^{-x} x f(x) dx$ ",
Math. Comp. 13, 1959, p. 285-294.

<u>n</u>	<u>N</u>	<u>row</u>	<u>column</u>	<u>for</u>	<u>read</u>
3	4	4	1	... 832(1)	... 833(1)
3	16	4	2	... 486(0)	... 487(0)
4	4	4	1	... 903(1)	... 904(1)
4	16	8	2	... 629(-1)	... 630(-1)
5	4	4	1	... 417(1)	... 418(1)
5	8	2	1	... 781(0)	... 782(0)
5	12	4	1	... 539(0)	... 540(0)
5	16	3	2	... 158(1)	... 159(1)
5	16	15	2	... 559(-13)	... 560(-13)
5	16	16	1	... 663(1)	... 664(1)

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American Science and Engineering, Inc., Cambridge, Mass., TABLES OF ABSCISSAE AND WEIGHTS FOR THE EVALUATION OF INTEGRALS OF THE FORM $\int_0^{\infty} x^a e^{-x} f(x) dx$ by Y. M. Treve. Air Force Cambridge Research Laboratories, Bedford, Mass. Final Report - Part I Number AFCRL-64-594(I), 34 pages, 1 July 1964. Unclassified Report The abscissae and weights of the Gauss-Laguerre quadrature formula $\int_0^{\infty} x^a e^{-x} f(x) dx \sim \sum_{k=1}^n w_k^{(a)} f\left(x_{k,n}^{(a)}\right)$ are given to 18 places for $a = 3, 4, 5, 9/2, 11/2$ and $13/2$ and $n = 1(1) 16$.	1. Evaluation of integrals 2. Generalized Laguerre polynomials	American Science and Engineering, Inc., Cambridge, Mass., TABLES OF ABSCISSAE AND WEIGHTS FOR THE EVALUATION OF INTEGRALS OF THE FORM $\int_0^{\infty} x^a e^{-x} f(x) dx$ by Y. M. Treve. Air Force Cambridge Research Laboratories, Bedford, Mass. Final Report - Part I Number AFCRL-64-594(I), 34 pages, 1 July 1964. Unclassified Report The abscissae and weights of the Gauss-Laguerre quadrature formula $\int_0^{\infty} x^a e^{-x} f(x) dx \sim \sum_{k=1}^n w_k^{(a)} f\left(x_{k,n}^{(a)}\right)$ are given to 18 places for $a = 3, 4, 5, 9/2, 11/2$ and $13/2$ and $n = 1(1) 16$.	1. Evaluation of integrals 2. Generalized Laguerre polynomials
American Science and Engineering, Inc., Cambridge, Mass., TABLES OF ABSCISSAE AND WEIGHTS FOR THE EVALUATION OF INTEGRALS OF THE FORM $\int_0^{\infty} x^a e^{-x} f(x) dx$ by Y. M. Treve. Air Force Cambridge Research Laboratories, Bedford, Mass. Final Report - Part I Number AFCRL-64-594(I), 34 pages, 1 July 1964. Unclassified Report The abscissae and weights of the Gauss-Laguerre quadrature formula $\int_0^{\infty} x^a e^{-x} f(x) dx \sim \sum_{k=1}^n w_k^{(a)} f\left(x_{k,n}^{(a)}\right)$ are given to 18 places for $a = 3, 4, 5, 9/2, 11/2$ and $13/2$ and $n = 1(1) 16$.	1. Evaluation of integrals 2. Generalized Laguerre polynomials	American Science and Engineering, Inc., Cambridge, Mass., TABLES OF ABSCISSAE AND WEIGHTS FOR THE EVALUATION OF INTEGRALS OF THE FORM $\int_0^{\infty} x^a e^{-x} f(x) dx$ by Y. M. Treve. Air Force Cambridge Research Laboratories, Bedford, Mass. Final Report - Part I Number AFCRL-64-594(I), 34 pages, 1 July 1964. Unclassified Report The abscissae and weights of the Gauss-Laguerre quadrature formula $\int_0^{\infty} x^a e^{-x} f(x) dx \sim \sum_{k=1}^n w_k^{(a)} f\left(x_{k,n}^{(a)}\right)$ are given to 18 places for $a = 3, 4, 5, 9/2, 11/2$ and $13/2$ and $n = 1(1) 16$.	1. Evaluation of integrals 2. Generalized Laguerre polynomials

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