I. Return measures

Name	Formula	Explanation	
discrete return	$R_t = \frac{P_t - P_{t-1}}{P_{t-1}} = \frac{P_t}{P_{t-1}} - 1$	R_t P_{t-1} P_t	= return = price in period t-1 (pervious period) = price in period t
average return	$\bar{r} = \frac{r_1 + r_2 + \ldots + r_T}{T} = \frac{1}{T}\sum_{t=1}^{T} r_t$	$\bar{r}$ r_t T	= average return (expected return, mean return) = return in period t = number of periods
geometric return	$\bar{r}_G = [(1 + r_1)(1 + r_2)\ldots(1 + r_T)]^{1/T} - 1$	r_t $\bar{r}_G$ T	= return in period t = geometric return = number of periods
logarithmic return	$\ln(\frac{P_t}{P_{t-1}})$	P_t	= price in period t
multi period return (e.g. over 3 years)	$[(1 + r_1)(1 + r_2)(1 + r_3)] - 1$	r_t	= return in period t
annual return	$R = \sqrt[T]{1 + R} - 1$	T	= number of periods
return on equity	$\frac{\text{net income}}{E_B} = \frac{\text{EPS}}{E_B \text{ per share}}$	E_B EPS	= Book value of equity = Earnings per share
expected return	$E[r] = \mu = \sum_{i=1}^{n} p_i r_i$	μ n p_i r_i	= expected value = number of scenarios = probability of scenario i = return for scenario i
stock return	$r = \frac{(P_T - P_0) + Div_t}{P_o} = \frac{P_T - P_0}{P_0} + \frac{Div_t}{P_0}$	P_T P_0 Div_t	= stock price at the end of the period = stock price at the beginning = dividend at the end of the period

II. Statistical essentials - Portfolio management

Name	Formula	Explanation	
expected value (average)	$E(x) = \mu = \sum_{i=1}^{n} x_i * p(x_i)$	$E(x) =$ μ x_i $p(x_i)$	= expected value = mean value = outcome $_i$ = probability of outcome $_i$
arithmetic mean	$\bar{x} = \frac{1}{n} \sum_{i=1}^{n} x_i$	n x_i	= number = outcome $_i$
variance	$Var(x) = \tilde{\sigma}^2 = \sum_{i=1}^{n} p(xi) * (x_i - \bar{x})^2$	$p(x_i)$	= probability of outcome $_i$
sample variance	$Var(x) = \tilde{\sigma}^2 = \frac{1}{n-1} \sum_{t=1}^{n} (x_i - \bar{x})^2$	n x_i $\bar{x}$	= number = outcome $_i$ = arithmetic mean
standard deviation (volatility)	$\sigma = \sqrt{Var(x)} = \sqrt{\sigma^2}$	Var	= variance
volatility timescale	$\sigma = \tilde{\sigma} * \sqrt{t}$	t	= time unit of sampling
semi variance	$\sigma^2 = \frac{1}{n} \sum_{i=1}^{n} (x_i^{negativ} - \bar{x})^2$	n $x_i^{negativ}$ $\bar{x}$	= number = negative outcome = arithmetic mean
covariance	$Cov_{(1,2)} = \sum_{i=1}^{n} p_i [r_{i,1} - E(r_1)][r_{i,2} - E(r_2)]$	$Cov_{1,2}$ p_i $r_{i,1}$ $r_{i,2}$	= covariance between the return of asset 1 and 2 = probability of scenario i = return of asset 1 for scenario i = return of asset 2 for scenario i
sample covariance	$Cov_{1,2} = \frac{1}{n-1} \sum_{i=1}^{T} [r_{i,1} - E(r_1)][r_{i,2} - E(r_2)]$	$Cov_{1,2}$ N	= covariance between asset 1 and 2 = number of samples

correlation coefficient	$p_{1,2} = \frac{Cov_{1,2}}{\sigma_1 \sigma_2} = \frac{Cov_{1,2}}{\sqrt{Var(R)_1} * \sqrt{Var(R)_2}}$	Cov σ_1 σ_2	= covariance between the return of asset 1 and 2 = standard deviation (volatility) of asset 1 = standard deviation (volatility) of asset 2
portfolio variance (2 Assets)	$\sigma_p^2 = w_1^2\sigma_1^2 + w_2^2\sigma_2^2 + 2w_1w_2Cov_{1,2}$	w	= weight of asset i
portfolio variance (3 Assets)	$\sigma^2 = w_1^2 * \sigma_1^2 + w_2^2 * \sigma_2^2 + w_3^2 * \sigma_3^2$ $+ 2 * w_1 * w_2 * \sigma_1 * \sigma_2 * p_{1,2}$ $+ 2 * w_2 * w_3 * \sigma_2 * \sigma_3 * p_{2,3}$ $+ 2 * w_1 * w_3 * \sigma_1 * \sigma_3 * p_{1,3}$		
portfolio volatility	$\sigma_P = \sqrt{w_1^2\sigma_1^2 + w_2^2\sigma_2^2 + 2w_1w_2Cov_{1,2}}$ or $\sigma_P = \sqrt{w_1^2\sigma_1^2 + w_2^2\sigma_2^2 + 2w_1w_2p_{1,2}\sigma_1\sigma_2}$	w σ p	= weight of asset i = standard deviation (volatility) of Asset 1 and 2 = correlation coefficient
portfolio volatility for a multi-asset-portfolio	$\sigma_p^2 = \sum_{i=1}^{n} w_i^2 * \sigma_i^2 + 2\sum_{i=1}^{n}\sum_{j<1} p_{ij} * w_i * w_j * \sigma_i * \sigma_j$ $\rightarrow \sqrt{\sigma_p^2} = \sigma_p$	w_i w_j σ_i^2 p_{ij}	= weight of $asset_i$ in % = weight of $asset_j$ in % = variance of asset i = correlation coefficient
portfolio variance (σ_p^2)	$\sigma_p^2 = \sum_{i=1}^{n} A_i^2 * \sigma_i^2$ $+ 2\sum_{i=1}^{n}\sum_{j<1} p_{ij} * A_i * A_j * \sigma_i * \sigma_j$	A_i σ_i^2 p_{ij} n σ_i, σ_j	= $asset_i$ = variance of asset i = correlation coefficient between i und j = number of assets = standard deviation
$M_{Optimimum}$ weight of asset A in a 2-asset portfolio	$\frac{E(r_{AE}) * \sigma_B^2 - E(r_{BE}) * Cov(r_{AE}, r_{BE})}{E(r_{AE}) * \sigma_B^2 + E(r_{BE}) * \sigma_A^2 - [E(r_{AE}) + E(r_{BE})] * Cov(r_{AE}, r_{BE})}$ with: $r_{AE} = r_A - r_f$	σ_i^2 Cov r_f	= variance of asset i = covariance between the returns A, B = risk free return

minimum-variance-approach	$x_{MVP}(A) = \frac{2 * \sigma_B^2 - 2 * Cov(r_A, r_B)}{2 * \sigma_A^2 + 2 * \sigma_B^2 - 4 * Cov(r_A, r_B)}$ $x_{MVP}(A) = \frac{\sigma_B^2 - Cov(r_A, r_B)}{\sigma_A^2 + \sigma_B^2 - 2 * Cov(r_A, r_B)}$ $x_{MVP}(A) = 1 - x_{MVP}(B)$	σ_i^2 r_A Cov	= variance of asset i = return of the asset A = covariance between the returns of asset A and B
portfolio-beta	$\beta_{Portfolio} = \sum_{i=1}^{N} x_{p,i} * \beta_i$	$X_{P,i}$ β_i	= weight of asset i in the portfolio = beta of asset i
excess return	$r_a = r_P - r_B$	r_p r_B	= return Portfolio = return Benchmark
market-timing	$r_{timing} = \sum_{i=1}^{N} (x_{p,i} - x_{B,i}) * r_{B,i}$	$X_{P,i}$ $X_{B,i}$ $r_{B,i}$	= weight of asset i in the portfolio = weight of asset i in the benchmark = return i in the benchmark
selection effect	$r_{selection} = \sum_{i=1}^{N} (r_{p,i} - r_{B,i}) * x_{B,i}$	$r_{P,i}$	= return i in the portfolio
interaction effect	$r_{Interaction} = \sum_{i=1}^{N} (x_{p,i} - x_{B,i}) * (r_{p,i} - r_{B,i})$		

III. Cost of Capital

Name	Formula	Explanation	
WACC	$r_E * \frac{E}{E+D} + r_D * \frac{D}{E+D}$	r_E r_D E D	= return on equity = return on debt = equity = debt
WACC after taxes	$r_E * \frac{E}{E+D} + r_D * \frac{D}{E+D} * (1 - t_m)$	E D t_m	= equity = debt = marginal tax rate
return on equity (M & M)	$WACC + (WACC - r_D) * \frac{D}{E}$	$WACC$ r_D D E	= Weighted Average Cost of Capital = return on debt = debt = equity
expected return (CAPM)	$E(r_k) = i_{riskfree} + \beta * \left(E(r_M) - i_{riskfree}\right) + \varepsilon_k$	$i_{riskfree}$ β $E(r_M)$ ε_k	= risk free rate = beta factor = expected return of the market portfolio = specific risk
expected return 3-factor-model Fama/French	$E(r_k) = i_{riskfree} + \beta_M * \left(E(r_M) - i_{riskfree}\right) + \beta_S * E(SMB) + \beta_H * E(HML) + \varepsilon_k$	β_S $E(SMB)$ β_H $E(HML)$	= Beta small minus big -effect = factor small minus big-effect = Beta high minus low-effect = factor high minus low-effect
beta-factor CAPM	$\beta_k = \frac{\sigma_k * p_{k,M}}{\sigma_M} = \frac{Cov_{(k,M)}}{\sigma_M^2}$	σ_k $p_{k,M}$ σ_M $Cov_{(k,M)}$ σ_M^2	= standard deviation of asset k = correlation between asset k and the market portfolio = standard deviation market portfolio = covariance $_{(k,M)}$ = variance market portfolio

cost of equity (DDM-Model)	$r_E = \frac{Div_1 + P_1}{P_0} - 1 = \frac{Div_1}{P_0} + \frac{P_1 - P_0}{P_0}$ or $\frac{Div_1}{P_0} + g$	P_0 P_1 Div_1 g	stock price today stock price in one year dividend in one year growth rate

IV. Corporate analysis

Name	Formula	Explanation	
debt ratio	$\frac{D}{D+E}$	D E	= debt = Equity
equity ratio	$\frac{E}{D+E}$	D E	= debt = Equity
debt to equity ratio	$\frac{D}{E}$	D E	= debt = Equity
dynamic leverage ratio	$\frac{liabilities - \ Cash\ \&\ Short\ Term\ Investments}{Cash\ Flow\ from\ Operating\ Activities}$		
interest coverage ratio	$\frac{EBIT}{interest\ expenses}$		
capital repayment ratio	$\frac{EBITDA}{D+E}$		
ROCE	$\frac{EBIT}{D+E}$		
quick ratio	$\frac{Cash + CE + MS + AR}{current\ liabilities}$	CE MS AR	= Cash equivalents = marketable securities = accounts receivable
liabilities repayment ratio	$\frac{Free\ Cashflow}{D}$		
gross margin	$\frac{Gross\ profit\ on\ sales}{revenue}$		
EBIT-margin	$\frac{EBIT}{revenue}$		

return on sales	$\frac{net\ income}{revenue}$		
return on assets	$\frac{\text{net income} + \text{interest expenditures}}{\text{total capital}}$		
return on investment	$\frac{\text{net income}}{revenue} * \frac{revenue}{\text{total capital}}$		
par value per share	$\frac{share\ capital}{N(S)}$	N(S)	= number of shares
number of shares	$\frac{share\ capital}{par\ value\ of\ a\ share}$		
earnings per share	$\frac{earnings\ after\ taxes}{\text{N(S)}} = book\ value\ per\ share * return\ on\ equity$		
dividend per share	$\frac{earnings\ after\ taxes * payout\ ratio}{\text{N(S)}}$		
new share price after raising new capital	$\text{M} = \frac{K_a * n_a + K_n * n_n}{n_a + n_n}$	K_a n_a K_n n_n	= old shares price = number of old shares = new shares price = number of new shares
subscription ratio	$SRatio = \frac{n_a}{n_n}$		
subscription rights	$SRights = K_a - M$ $SRights = \frac{K_a - K_n}{\frac{n_a}{n_n} + 1}$		
operation blanche	$\frac{number\ of\ SRights * price\ SRights}{\text{New share price after a capital raise}}$	$SRights$	= subscription rights
dividend yield	$\frac{dividend\ per\ share}{price\ per\ share} * 100$		
dividend per share	$\frac{net\ income_t}{N(S)} * payout\ ratio$	N(S)	= outstanding shares

retention ratio	$1 - \frac{\text{Div}}{\text{EPS}}$	Div EPS	= dividend = earnings per share
growth rate	$g = \frac{change\ in\ profit}{profit}$ or $g = retention\ ratio * ROE$		
earnings value	$\frac{average\ income\ per\ year}{i}$	i	= discount rate
book value per share	$\frac{(book\ value)equity}{N(S)}$	N(S)	= number of shares
price to book ratio	$\frac{share\ price}{book\ value\ per\ share} = \frac{market\ capitalisation}{equity}$		
price earnings ratio	$\frac{P_0}{EPS_1} = \frac{1}{c - g}$ $EPS_1 = EPS_0 * (1 + g)$	P_0 EPS_1 g c	= price of the asset = expected earnings per share in one year = growth rate = cost of capital
price to cashflow ratio	$\frac{P_0}{Cashflow\ per\ share}$	P_0	= share price
PEG	$\frac{KGV}{profit\ growth}$	PEG	= Price-Earnings-to-Growth-Ratio

V. Corporate valuation

Name	Formula	Explanation	
market capitalization	$P_0 * N(S)$	N(S) P_0	= number of shares = share price today
share price (Dividend-Discount-Model)	$P_0 = \frac{Div_1 + P_1}{1 + r_E}$	P_0 Div_1 P_1 r_E	= Price of the asset in t0 = dividend in t1 = Price of the asset in t1 = expected return
share price (DDM-multi periods)	$P_0 = \frac{Div_1}{1 + r_E} + \frac{Div_2}{(1 + r_E)^2} + \cdots \frac{Div_n + P_n}{(1 + r_E)\text{^n}}$		
share price (DDM – constant growth)	$P_0 = \frac{Div_1}{r_E - g}$	g	= growth rate
enterprise value	market value equity + debt – cash		
enterprise value (DCF-Modell)	$= \sum_{t=1}^{T} \frac{FCF_t}{(1 + i)^t} + \frac{TV_T}{(1 + i)^T}$ with $TV_T = \frac{CF\ t+1}{i-g}$	FCF_t TV_T i g	= free-cashflow in period t = terminal value = discount rate = growth rate
share price in t_0	$P_0 = \frac{\text{PV(future total dividends + repurchases)}}{N(S)}$	PV N(S)	= present value = outstanding shares
enterprise value (perpetuity)	$\frac{\text{FCF}}{i}$	FCF i	= free cashflow = discount rate
share price in t_0	$\frac{V_0 + Cash_0 - Debt_0}{N(S)}$	V_0 N (S)	= enterprise value = outstanding shares
tax shield	corporate tax rate ∗ interest payment		
enterprise value (V_l)	$V_u + PV(\mathit{Tax\ Shield}) - PV(\mathit{Financial\ distress})$	V_l V_u	= enterprise value levered firm =enterprise value unlevered firm
EV/ EBITDA multiple	$\frac{V_0}{EBITDA}$		

equity multiple (book value)	$\frac{\text{Total Assets}}{E_B}$	E_B	= Book Value equity
equity multiple (market value)	$\frac{\text{Total Assets}}{E_M}$	E_M	= Market Value equity
value additivity	$\mathrm{P}\,(\mathrm{C}) = \mathrm{P}\,(\mathrm{A}+\mathrm{B}) = \mathrm{P}\,(\mathrm{A}) + \mathrm{P}\,(\mathrm{B})$	P	= Price

VI. Risk indicators and Risk Management

Name	Formula	Explanation	
Sharpe-Ratio	$\frac{(\hat{r}_{Portfolio} - i_{riskfree})}{\sigma_{Portfolio}}$	$\hat{r}_{Portfolio}$ $i_{riskfree}$ $\sigma_{Portfolio}$	= average return portfolio = risk-free rate = portfolio volatility
SCML (Growth capital market line)	$\frac{r_M - i_{riskfree}}{\sigma_M}$	$i_{riskfree}$ r_M σ_M	= risk-free rate = return market portfolio = volatility market portfolio
Treynor-Ratio	$\frac{\hat{r}_{Portfolio} - i_{riskfree}}{\beta_{Portfolio}}$	$\hat{r}_{Portfolio}$ $i_{riskfree}$ $\beta_{Portfolio}$	= average return portfolio = risk-free rate = beta factor portfolio
Jensen-Alpha	$(\hat{r}_{Portfolio} - i_{riskfree}) - (\hat{r}_{Benchmark} - i_{riskfree}) * \beta_{Portfolio} + \varepsilon$	$\hat{r}_{Benchmark}$	= average return benchmark
Value at Risk (VaR)	$\mathrm{VaR} = \mathrm{RP} * \sigma * \mathrm{N(x)} * \sqrt{t}$	RP σ N(x) $\sqrt{t}$	= risk position = volatility = confidence level = liquidation period
marginal Value at Risk ($\Delta\, VaR_i$)	$= \mathrm{N(x)} * \frac{\mathrm{COV}_{(x,y)}}{\sigma_{portfolio}}$	$\mathrm{COV}_{(x,y)}$ $N(x)$	= covariance = confidence level
incremental Value at Risk	$\mathrm{VaR_i} = \mathrm{N_i} * \mathrm{ß_i} * \sigma_p * \mathrm{a_i}$	N_i $ß_i$ a_i	= confidence level = beta factor = amount of the increased asset

component Value at Risk	$CoVaR_i = \text{Portfolio VaR} * ß_i * w_i$	$ß_i$ w_i	= beta factor = weight of asset i in %
Value at Risk – adjustment of liquidation period	$VaR_t = VaR * \sqrt{t}$	VaR t	= value at Risk = time period
Value at Risk – adjustment of confidence level	$VaR\ (x^*) = VaR\ (x) * \frac{N(x^*)}{N(x)}$	$N(x^*)$ $N(x)$	= new confidence level = confidence level
cost of capital with risk premium	$= \frac{MRP}{VaR\ (r_M)} = \frac{r_M - i_{riskfree}}{-(r_M + N(x) * \sigma_M)}$	MRP	= market risk premium
cost of capital based on earnings risk	$\frac{1+i_{riskfree}}{1-\lambda * V * d} - 1$	λ V d	= excess return per unit of risk (shape ratio) = coefficient of variation of the returns =risk diversification factor
insurance premium	$\frac{[\Pr(loss) * E\ (Payment\ in\ the\ loss\ event)]}{1 + c}$	c	= cost of capital
default risk	$PD * \text{amount of risk default}$	PD	= probability of default
return on risk-adjusted capital (RoRaC)	$= \frac{\text{net income}}{\text{allocated risk capital}}$ $= \frac{\text{price gain} - \text{risk free interest rate}}{CoVaR}$ $= \frac{\text{revenue} - \text{costs}}{CoVaR}$	CoVaR	= Component Value at risk
risk-adjusted return on capital (RaRoC)	$= \frac{\text{risk adjusted net income}}{(economic\ risk)\ capital}$ $= \frac{\text{Net income} - \text{risk capital}}{(economic\ risk)\ capital}$		

expected loss	$PD * LGD * EaD$	PD LGD EaD	= probability of default = loss given default / recovery rate = exposure at default / credit default
risk-adjusted lending rates → equity capital costs	1. standard deviation of loss rate in % 2. $\sigma_{PD} = \sqrt{PD * (1 - PD)}$ 3. credit VaR (CVaR) = $EaD * \sqrt{PD * \sigma^2_{LGD} + LGD^2 * \sigma^2_{PD}}$ 4. Equity costs $_{€}$= CVaR * Equity costs %	σ_{LGD} σ_{PD} σ^2_{LGD} σ^2_{PD} CVaR	= volatility of the loss given default = volatility of the probability of default = variance of the loss given default = variance of the loss given default = Credit Value at risk
CVaR of a credit portfolio	$\sqrt{CVaR^2_A + CVaR^2_B + 2 * CVaR_A * CVaR_B * p_{1,2}}$	$p_{A,B}$	= correlation coefficient of A and B
portfolio-hedge	Hedge-Ratio= $\frac{\text{portfolio value}}{(\text{Index}*\text{contract value})}$ *Beta		

VII. Working Capital Management

Name	Formula	Explanation	
working capital	$\text{Current assets} - \text{current liabilities}$		
cost of holding working capital	$\text{working capital} * \text{c}$	c	= cost of capital
cash conversion cycle	$\varnothing\text{days in inventory} + \varnothing\text{ collection period} - \varnothing\text{ payment period}$	Ø	= average
inventory days outstanding (DIO)	$\frac{\varnothing\text{ inventory}}{\text{cost of goods sold}} * 365$		
days sales outstanding (DSO)	$\frac{\varnothing\text{ accounts receivable}}{\text{sales}} * 365$		
days payable outstanding (DPO)	$\frac{\varnothing\text{ accounts payable}}{\text{cost of goods sold}} * 365$		

VIII. Bond valuation

Name	Formula	Explanation	
present Value	$PV = \sum_{t=1}^{n} \frac{CF_t}{(1+i)^t}$	CF_t i t	= cashflow in period t = discount rate = period of the cashflow
effective rate (Approximation formula)	$\frac{Nominal\ interest\ rate + \frac{repayment\ price - Purchase\ Price}{Duration}}{Purchase\ Price}$		
issue price (Zero bonds)	$A = \frac{FV}{(1+i_m)^T}$	FV T i_m	= face value = periods = market interest rate
effective rate (Zero bonds)	$r_{eff} = \left(\frac{FV}{P}\right)^{\frac{1}{t}} - 1$	C t P	= face value = period = price

coupon payment (coupon bonds)	$\frac{\text{Coupon Rate} * \text{FV}}{\text{Number Payments per Year}}$	FV	= face value
yield to Maturity	$(\frac{\text{FV}}{\text{P}})^{\frac{1}{t}} - 1$	t P	= period = Price
price bond	$\text{CPN} * \frac{1}{\text{Y}}\left(1 - \frac{1}{(1+\text{Y})^t}\right) + \frac{\text{FV}}{(1+\text{Y})^t}$	CPN Y	= Coupon Payment = Yield to maturity

IX. Derivatives

Name	Formula	Explanation	
option price	Intrinsic value + time value		
intrinsic value call option	$P_0 - strike\ price$	P_0	= Current Market Price of Underlying Asset
intrinsic value put option	$strike\ price - P_0$	P_0	= Current Market Price of Underlying Asset
time value option	$Option\ price\ -\ positive$ intrinsic value		
leverage option	$\frac{P_0}{(Option\ price\ * SR)}$	P_0 SR	= share price = subscription ratio
future Price	$F_0 = S_0e^{(r-q)*T}$ $F_0 = S_0e^{(r-rf)*T}$ $F_0 = (S_0 + U_{PV})e^{rT}$	e S_0 T r q r_f U_{PV}	= number of Euler = Price underlying asset today = time to maturity = risk-free rate = dividend yield = foreign risk-free rate = present value storage costs

X. Other Calculations

net present value	$NPV = -C + \sum_{t=1}^{n} \frac{CF_t}{(1+i)^t}$	CF_t i t C	= cashflow in period t = discount rate = period of the cashflow = initial investment
net present value with probability of bankruptcy	$NPV = -C + \sum_{t=1}^{n} \frac{CF_t * (1-P_B)^t}{(1+i)^t}$	P_B	= probability of bankruptcy
present value with probability of bankruptcy (perpetuity)	$PV = \frac{CF * (1-P_B)}{i + P_B}$	P_B	= probability of bankruptcy

Required statistic table: Normal distribution

z	.00	.01	.02	.03	.04	.05	.06	.07	.08	.09
0.0	.5000	.5040	.5080	.5120	.5160	.5199	.5239	.5279	.5319	.5359
0.1	.5398	.5438	.5478	.5517	.5557	.5596	.5636	.5675	.5714	.5753
0.2	.5793	.5832	.5871	.5910	.5948	.5987	.6026	.6064	.6103	.6141
0.3	.6179	.6217	.6255	.6293	.6331	.6368	.6406	.6443	.6480	.6517
0.4	.6554	.6591	.6628	.6664	.6700	.6736	.6772	.6808	.6844	.6879
0.5	.6915	.6950	.6985	.7019	.7054	.7088	.7123	.7157	.7190	.7224
0.6	.7257	.7291	.7324	.7357	.7389	.7422	.7454	.7486	.7517	.7549
0.7	.7580	.7611	.7642	.7673	.7704	.7734	.7764	.7794	.7823	.7852
0.8	.7881	.7910	.7939	.7967	.7995	.8023	.8051	.8078	.8106	.8133
0.9	.8159	.8186	.8212	.8238	.8264	.8289	.8315	.8340	.8365	.8389
1.0	.8413	.8438	.8461	.8485	.8508	.8531	.8554	.8577	.8599	.8621
1.1	.8643	.8665	.8686	.8708	.8729	.8749	.8770	.8790	.8810	.8830
1.2	.8849	.8869	.8888	.8907	.8925	.8944	.8962	.8980	.8997	.9015
1.3	.9032	.9049	.9066	.9082	.9099	.9115	.9131	.9147	.9162	.9177
1.4	.9192	.9207	.9222	.9236	.9251	.9265	.9279	.9292	.9306	.9319
1.5	.9332	.9345	.9357	.9370	.9382	.9394	.9406	.9418	.9429	.9441
1.6	.9452	.9463	.9474	.9484	.9495	.9505	.9515	.9525	.9535	.9545
1.7	.9554	.9564	.9573	.9582	.9591	.9599	.9608	.9616	.9625	.9633
1.8	.9641	.9649	.9656	.9664	.9671	.9678	.9686	.9693	.9699	.9706
1.9	.9713	.9719	.9726	.9732	.9738	.9744	.9750	.9756	.9761	.9767
2.0	.9772	.9778	.9783	.9788	.9793	.9798	.9803	.9808	.9812	.9817
2.1	.9821	.9826	.9830	.9834	.9838	.9842	.9846	.9850	.9854	.9857
2.2	.9861	.9864	.9868	.9871	.9875	.9878	.9881	.9884	.9887	.9890
2.3	.9893	.9896	.9898	.9901	.9904	.9906	.9909	.9911	.9913	.9916
2.4	.9918	.9920	.9922	.9925	.9927	.9929	.9931	.9932	.9934	.9936
2.5	.9938	.9940	.9941	.9943	.9945	.9946	.9948	.9949	.9951	.9952
2.6	.9953	.9955	.9956	.9957	.9959	.9960	.9961	.9962	.9963	.9964
2.7	.9965	.9966	.9967	.9968	.9969	.9970	.9971	.9972	.9973	.9974
2.8	.9974	.9975	.9976	.9977	.9977	.9978	.9979	.9979	.9980	.9981
2.9	.9981	.9982	.9982	.9983	.9984	.9984	.9985	.9985	.9986	.9986
3.0	.9987	.9987	.9987	.9988	.9988	.9989	.9989	.9989	.9990	.9990
3.1	.9990	.9991	.9991	.9991	.9992	.9992	.9992	.9992	.9993	.9993
3.2	.9993	.9993	.9994	.9994	.9994	.9994	.9994	.9995	.9995	.9995
3.3	.9995	.9995	.9995	.9996	.9996	.9996	.9996	.9996	.9996	.9997
3.4	.9997	.9997	.9997	.9997	.9997	.9997	.9997	.9997	.9997	.9998