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Musterklausur Finanzierung

Name, Vorname:

Matrikelnummer:

Studiengang:

- Die Klausur besteht aus 50 Aufgaben. Die Bearbeitungszeit beträgt 90 Minuten.
- Es gibt insgesamt 80 Punkte. Es werden keine Maluspunkte vergeben.
- Als Hilfsmittel ist ausschliesslich ein nicht-programmierbarer Taschenrechner zugelassen.
- Verwenden Sie für Ihre Ergebnisse ausschliesslich den Lösungsbogen, nur die dort gesetzten Kreuze gehen in die Bewertung ein.
- Schreiben Sie auf dieses Deckblatt sowie den Lösungsbogen Ihren Namen und Ihre Matrikelnummer.
- Im Anhang finden Sie die Tabelle der Normalverteilung.

Viel Erfolg bei der Bearbeitung!

1. **2 points**

Suppose VS's stock price is currently \$20. Every six months it will either fall by 50% or rise by 50%. What is the current value of a put option with an exercise price of \$15 and expiration of one year? The six-month risk-free interest rate is 5% (periodic rate). Use the two stage binomial method.

- (a) \$8.23
- (b) \$2.14
- (c) \$4.08
- (d) \$1.93
- (e) \$1.84

2. **2 points**

Cola Company has call options on its common stock traded in the market. The options have an exercise price of \$45 and expire in 156 days (the calendar year has 365 days). The current price of the Cola stock is \$44.375. The risk-free rate is 7% per year and the standard deviation of the stock returns is 0.31. $N(d_1)$ is given with 0.5675. Calculate the value of d_2 (approximately) given the following formulas from the BMA-textbook: $d_1 = \frac{\log[P/PV(EX)]}{\sigma\sqrt{t}} + \frac{\sigma\sqrt{t}}{2}$ and $d_2 = d_1 - \sigma\sqrt{t}$.

- (a) -0.0277
- (b) -0.0327
- (c) +0.3645
- (d) -3.3044
- (e) -3.7019

3. **2 points**

The stock price of Vion is \$30. The price may either rise by 20% or fall by 30% during each of the next 6-month periods. The interest rate per year is 5%. The exercise price is \$30. What is the risk-neutral probability ρ that would be used to calculate the value of a half-year option?

- (a) 0.47
- (b) 0.65
- (c) 0.70
- (d) 0.75
- (e) 0.60

4. 1 point

If the volatility (variance) of the underlying stock increases then the: [Assume that everything else remains the same.]

- (a) ... value of the put option increases and that of the call option decreases.
- (b) ... value of the put option decreases and that of the call option increases.
- (c) ... value of both the put option and the call option increases.
- (d) ... value of both the put option and the call option decreases.
- (e) ... value of neither the put nor the call is influenced.

5. 1 point

The stock of Company Y traded at \$64.70 yesterday and an investor bought a call option with an exercise price of \$65.50 and paid \$1.76 for it. Today, the call option is traded for \$1.80. What happened to the stock price between yesterday and today?

- (a) The stock price decreased.
- (b) The stock price remained constant.
- (c) The stock price increased.
- (d) Only the time value of the option changed but not the intrinsic value.
- (e) We need more information to answer this question.

6. 1 point

Banks that have a portfolio of loans generally hedge against default of loans by:

- (a) Negotiating default swap on each individual loan
- (b) Buying credit option on each individual loan
- (c) Negotiating a portfolio default swap, which provides protection on the entire portfolio
- (d) Selling credit options
- (e) None of the above

7. 2 points

If you sold a wheat futures contract for \$3.75 per unit and the contract ended at \$3.60, how much will you net per unit? (Ignore transaction costs.)

- (a) \$-7.35
- (b) \$-3.75
- (c) \$3.60
- (d) \$0.15
- (e) \$-0.15

8. 2 points

The spot price of wheat is \$2.90/unit. The one year futures price is \$3.00/unit. If the risk-free rate is 5%, calculate the net convenience yield.

- (a) +0.0345
- (b) -0.0345
- (c) -0.0155
- (d) +0.0155
- (e) None of the above

9. 2 points

A firm owns an asset A and it wants to hedge against changes in the value of A by making an offsetting sale of asset B. δ is the hedge ratio. The firm minimizes risk by:

- (a) Selling the same number of units of B as assets of A
- (b) Selling δ number of units of B
- (c) Selling the reciprocal of hedge ratio number of units of B
- (d) Selling $1-\delta$ number of units of B
- (e) Selling $1+\delta$ number of units of B

10. **1 point**

The owner of a regular exchange-listed put-option on the stock:

- (a) Has the right to sell the underlying stock at the exercise price
- (b) Has the right to buy the underlying stock at the exercise price
- (c) Has the obligation to buy the underlying stock at the current price
- (d) Has the obligation to sell the underlying stock at the exercise price
- (e) Has the right to buy the underlying stock at the current price

11. **1 point**

Which of the following investors would be happy to see the stock price rise sharply?

- I) Investor who owns the stock and a put option
- II) Investor who has sold a put option and bought a call option
- III) Investor who owns the stock and has sold a call option
- IV) Investor who has sold a call option

- (a) II only
- (b) I and II only
- (c) III and IV only
- (d) III only
- (e) IV only

12. **1 point**

For hedging, firms regularly use the following to reduce their portfolio risk: I) Currency options II) Interest-rate options III) Commodity options

- (a) I only
- (b) II only
- (c) III only
- (d) I, II, and III
- (e) I and II only

13. **2 points**

Suppose an investor buys one share of stock and a call option on the stock. What will be the value of her investment on the final exercise date if the stock price is above the exercise price? (Ignore transaction costs.)

- (a) The value of two shares of stock
- (b) The value of one share of stock plus the exercise price
- (c) The value of two shares of stock minus the exercise price
- (d) The value of one share of stock minus the exercise price
- (e) The value of one share of stock

14. **1 point**

The buyer of a put option has the right to exercise, and the writer of the put option has:

- (a) The obligation to deliver the shares at exercise price
- (b) The choice to offset with a call option
- (c) The choice to deliver the shares at exercise price
- (d) The obligation of exercising a call
- (e) The obligation to buy the share at exercise price

15. **2 points**

Petroleum Inc. owns a lease to extract crude oil from the sea. It is considering the construction of a deep-sea oil rig at an initial cost of \$50 million (C_0). The price of oil P is \$40/barrel and the extraction costs are \$25/barrel. The quantity of oil is $Q = 300,000$ barrel per year forever. The risk-free rate is 6% per year and that is also the cost of capital (ignore taxes). Suppose the oil price is uncertain and can be \$60/barrel or \$30/barrel next year and forever thereafter with equal probability, then the expected NPV of the project if postponed by one year is:

- (a) +25 million
- (b) -25 million
- (c) +40 million
- (d) -40 million
- (e) +59 million

16. **2 points**

Kinston Industries has come up with a new mountain bike prototype. The pilot production and test marketing phase will last for one year and cost \$500,000. Your management team believes that there is a 50% chance that the test marketing will be successful. If the test-marketing phase is successful, then Kinston Industries will invest \$3 million in year one to build a plant that will generate expected annual after tax cash flows of \$400,000 in perpetuity beginning in year two. If the test marketing is not successful, Kinston can still go ahead and build the new plant, but the expected annual after tax cash flows would be only \$200,000 in perpetuity beginning in year two. Kinston has the option to stop the project at any time and sell the prototype mountain bike to an overseas competitor for \$300,000. Kinston's cost of capital is 10%.

What is the NPV of the Kinston Industries Mountain Bike Project closest to?

- (a) \$91,000
- (b) \$590,000
- (c) \$454,000
- (d) \$-46,000
- (e) \$150,000

17. **1 point**

An abandonment option, in effect,

- (a) ... limits the flexibility of management's decision-making.
- (b) ... increases the chance of a firm's success.
- (c) ... limits the profit potential of a proposed project.
- (d) ... applies only to new projects.
- (e) ... limits the downside risk of an investment project.

18. **2 points**

The spot Peso/US\$ exchange rate is Peso 10.9892/US\$. The 3-month forward rate is Peso 11.0408/US\$. What is the Peso's forward premium (or discount) on the US dollar, expressed as an annual rate? (Approximately)

- (a) 0.8% premium
- (b) 2.1% premium
- (c) 0.5% premium
- (d) 1.6% discount
- (e) 1.9% discount

19. **2 points**

Assume that international capital markets are competitive and that the real interest rates are the same. The one-year interest rate is approximately 9% in the US and 5% in Switzerland. If the expected inflation rate is 6% in the US, what is the expected inflation rate in Switzerland? (Approximately)

- (a) 16.2%
- (b) 10.3%
- (c) 2.1%
- (d) 4.5%
- (e) 0.9%

20. **1 point**

A quotation in the form Yens 119.33/US\$ is called:

- (a) An indirect quotation in USA
- (b) A direct quotation in USA
- (c) A cross quotation in Japan
- (d) A medium quotation in USA
- (e) A rate quotation in Japan

21. **2 points**

Companies A and B are valued as follows:

	A	B
# of shares	2000	1000
Earnings per share	\$10	\$10
Share price	\$100	\$50

Company A now acquires B by offering one (new) share of A for every two shares of B (that is, after the merger, there are 2500 shares of A outstanding). Suppose that the merger really does increase the value of the combined firms by \$20,000. (i.e., $PV_{AB} - PV_A - PV_B = \$20,000$). What is the cost of the merger?

- (a) Zero
- (b) \$2,000
- (c) \$8,000
- (d) \$4,000
- (e) \$10,000

22. **2 points**

The following data on a merger is given:

Firm A has proposed to acquire Firm B at a price of \$20 per share for Firm B's stock.

	Firm(A)	Firm(B)	Firm(AB)
Price per share	\$100	\$10	
Total earnings	\$500	\$300	
Shares outstanding	100	40	
Total value	\$10,000	\$400	\$11,000

Calculate the gain from the merger.

- (a) \$600
- (b) \$150
- (c) \$550
- (d) \$700
- (e) None of the above

23. 1 point

In case of carve-outs:

- (a) Shares of the new company are given to the shareholders of the parent company
- (b) Shares of the new company are sold in a public offering
- (c) Shares of the new company are given to a private equity firm
- (d) Shares of the new company are bought by borrowing or issuing junk bonds
- (e) None of the above

24. 1 point

A private-equity investment fund is usually organized as a:

- (a) Partnership
- (b) Corporation
- (c) Sole proprietorship
- (d) Could be all of the above
- (e) None of the above

25. 1 point

A firm whose only asset is controlling blocks of shares in other firms is called:

- (a) A conglomerate
- (b) A holding company
- (c) A pyramid
- (d) Dual-class company
- (e) A horizontal merger

26. 1 point

One key assumption of the Miller and Modigliani (MM) dividend irrelevance theorem is that:

- (a) Future stock prices are certain.
- (b) Tax rates increase at the same rate as inflation.
- (c) Capital markets are efficient.
- (d) Investors can calculate risk-neutral probabilities.
- (e) Investors are indifferent between cash dividends and stock dividends.

27. **1 point**

The JRN Corporation will pay a constant dividend of \$3 per share, per year, in perpetuity. Assume that all investors pay a 20% tax on dividends and that there is no capital gains tax. The pre-tax cost of capital for investing in JRN stock is 12%. What is the share price of JRN stock, assuming perfect capital markets except for the existence of taxes?

- (a) \$25.00
- (b) \$24.00
- (c) \$18.00
- (d) \$20.00
- (e) \$23.50

28. **2 points**

Rockwood Industries has 100 million shares outstanding, a current share price of \$25, and no debt. Rockwood's management believes that the shares are under-priced, and that the true value is \$30 per share. Rockwood plans to pay \$240 million in cash to its shareholders by repurchasing shares. The management expects that very soon new information will come out that will cause investors to revise their opinion of the firm and agree with the management's assessment of the firm's true value. Assume that Rockwood is not able to repurchase shares prior to the market becoming aware of the new information regarding Rockwood's true value. If Rockwood repurchases the shares following the release of the new information, then the number of shares outstanding following the repurchase is:

- (a) 92,000,000 shares
- (b) 91,111,111 shares
- (c) 91,000,000 shares
- (d) 92,323,232 shares
- (e) 92,300,000 shares

29. **2 points**

Which of the following statements is false?

- I) When a firm increases its dividend, it sends a positive signal to investors that management expects to be able to afford the higher dividend for the foreseeable future.
- II) When managers cut the dividend, it may signal that they have given up hope that earnings will rebound in the near term and so need to reduce the dividend to save cash.
- III) Because of the increasing popularity of repurchases, firms cut dividends much more frequently than they increase them.
- IV) Managers are much less committed to dividend payments than to share repurchases.
- V) Managers will clearly be more likely to repurchase shares if they believe the stock to be under-valued.

- (a) III and IV only
- (b) III and V only
- (c) II, III and V only
- (d) I, III and IV only
- (e) II, IV and V only

30. **2 points**

Suppose you own 2400 shares of the USP company. The company's projects generate free cash flow of \$ 10 million per year in perpetuity. Additionally, the company owns \$5 million of excess cash. The company decides to use the excess cash to pay a special dividend. You would have preferred the company to use the excess cash to repurchase shares, in which case you would not have sold any shares. Under the assumptions of Modigliani and Miller, what can you do to get your preferred combination of shares and cash? There are 5 million shares outstanding and the cost of capital is 12.5%.

- (a) buy 180 shares
- (b) buy 166.66 shares
- (c) buy 175 shares
- (d) buy 150 shares
- (e) buy 100 shares

31. 2 points

Which of the following statements is false?

I) Given a 35% corporate tax rate, for every \$1 in new permanent debt that the firm issues, the value of the firm increases by \$0.65.

II) The firm's marginal tax rate may fluctuate due to changes in the tax code and changes in the firm's income.

III) Given a forecast of future interest payments, we can determine the interest tax shield and compute its present value by discounting it at a rate that corresponds to its risk.

IV) By increasing the amount paid to debt holders through interest payments, the amount of the pretax cash flows that must be paid as taxes decreases.

- (a) I only
- (b) II and III only
- (c) I, II and III only
- (d) II, III and IV only
- (e) I, II, III and IV

32. 2 points

If a firm borrows \$50 million for one year at an interest rate of 10%, what is the present value of the interest tax shield? Assume a 30% tax rate and that the tax shield is as risky as the debt.

- (a) \$1.00 million
- (b) \$4.55 million
- (c) \$2.50 million
- (d) \$1.50 million
- (e) None of the above

33. **2 points**

Flagstaff Enterprises expects to have free cash flow in the coming year of \$8 million, and this free cash flow is expected to grow at a rate of 3% per year thereafter. Flagstaff has an equity cost of capital of 13%, a debt cost of capital of 7%, and it is in the 35% corporate tax bracket. If Flagstaff maintains a ratio of debt to firm value of $\frac{1}{3}$ for ever, then the value of Flagstaff as a levered firm is:

- (a) \$133.4 million
- (b) \$127.3 million
- (c) \$85.7 million
- (d) \$111.4 million
- (e) \$99.9 million

34. **2 points**

Assuming a corporate tax rate of 33%, what is the relative tax advantage of debt under the new 'Abgeltungssteuer' tax-regime (in which the personal tax on equity income equals the personal tax on interest income) in Germany?

- (a) 0
- (b) 1
- (c) 1.33
- (d) 1.49
- (e) 1.67

35. **2 points**

When faced with financial distress; managers of firms acting on behalf of their shareholders are likely to:

- I) Favor high risk, high return projects even if they have negative NPVs.
- II) Refuse to invest in low risk, low return projects with positive NPVs under the assumption that equity holders need to contribute additional equity in financing the projects.
- III) Delay the onset of bankruptcy as long as they can.
- IV) Favor paying high dividends to the shareholders.

- (a) I and II only
- (b) I and III only
- (c) I, II and IV only
- (d) II and IV only
- (e) I, II, III and IV

36. 1 point

Abnormal stock return is calculated as

- (a) Actual stock return - expected stock return
- (b) Return on stock - return on market
- (c) Return on stock for the current period - return on stock for the previous period
- (d) Expected stock return - return on market
- (e) None of the above

37. 2 points

A lawyer works for a firm that advises corporate firms planning to sue other corporations for antitrust damages. He finds that he can 'beat the market' by short selling the stock of the firm that will be sued. This finding is in violation of the:

- (a) Weak form market efficiency only
- (b) Semi-strong form market efficiency only
- (c) Strong form market efficiency only
- (d) Weak and semi-strong form market efficiency only
- (e) None of the above

38. 1 point

Mental accounting implies that individuals tend to:

- I) Ignore the size of the sample from which information is drawn.
- II) Overestimate their abilities.
- III) Ignore connections between multiple investment decisions.
- IV) Place too little weight on observations relative to the prior.

- (a) II only
- (b) III only
- (c) I and III only
- (d) I and IV only
- (e) I, III and IV only

39. **2 points**

A random walk process consists of the toss of a fair coin at the end of each day. If the outcome is heads, the stock price increases by 1.25%. If the outcome is tails, the stock price decreases by 0.75%. What is the drift of such a process?

- (a) +1.25%
- (b) +0.5%
- (c) +0.75%
- (d) 0%
- (e) +0.25%

40. **1 point**

The equity accounts of Bio-Tech Company are as follows:

<i>Common shares</i> (\$1.00 <i>par value</i>)	\$ 10,000,000
<i>Additional paid – in – capital</i>	\$ 50,000,000
<i>Retained earnings</i>	\$ 125,000,000
<i>Treasury shares at cost</i>	\$ 1,000,000
<i>Net common equity</i>	\$ 186,000,000

Suppose that the firm sells 2,000,000 new (additional) shares at a price of \$20 per share. What is the new value of additional paid-in-capital, assuming that par value is the same as in previous issues?

- (a) \$144,000,000
- (b) \$40,000,000
- (c) \$88,000,000
- (d) \$70,000,000
- (e) \$48,000,000

41. **2 points**

Wealth and Health Company is financed entirely by common stock. The common stock price is \$40/share. The earnings per share (EPS) are expected to be \$5. If the company repurchases 50% of the common stock and substitutes an equal value of debt yielding 8%, what is the expected value of earnings per share after refinancing? (Assume that the assumptions of Modigliani and Miller hold.)

- (a) 6.00\$
- (b) 6.80\$
- (c) 7.52\$
- (d) 7.60\$
- (e) None of the above

42. **1 point**

If an investor buys a part a of both debt and equity of a levered firm then his/her payoff is:

- (a) $a \times profits$
- (b) $a \times interest$
- (c) $a \times (profits - interest)$
- (d) $a \times (profits + interest)$
- (e) None of the above

43. **1 point**

Under the assumptions of Modigliani and Miller, for a levered firm return on equity (r_E) is equal to:

- (a) $r_E = r_A$
- (b) $r_E = r_A + (r_A - r_D)$
- (c) $r_E = r_A + \frac{E}{D}(r_A - r_D)$
- (d) $r_E = r_A + \frac{E}{D+E}(r_A - r_D)$
- (e) None of the above

44. **2 points**

Which of the following statements is false under the assumptions of MM?

I) The cost of capital of levered equity is equal to the cost of capital of unlevered equity plus a premium that is proportional to the market value debt-equity ratio.

II) By holding a portfolio of the firm's equity and its debt, we can replicate the cash flows from holding its levered equity.

III) If a firm is unlevered, all of the free cash flows generated by its assets are available to be paid out to its equity holders.

- (a) I only
- (b) II only
- (c) III only
- (d) I and II only
- (e) I, II and III

45. **2 points**

Consider a project with free cash flows in one year of \$90,000 in a weak economy or \$117,000 in a strong economy, with each outcome being equally likely. The initial investment required for the project is \$90,000, and the project's cost of capital is 15%. The risk-free interest rate is 5%. Suppose that in financing the project, a firm borrows \$30,000 at the risk-free rate. Under the assumption that this is the only project the firm possesses and that the assumptions of Modigliani and Miller hold, the firm's equity cost of capital is:

- (a) 22.5%
- (b) 21.5%
- (c) 23.0%
- (d) 20.5%
- (e) 20.0%

46. **1 point**

A corporate bond has a one-year maturity. The bond pays an interest of \$50 and principal of \$1,000 at the time of maturity and is trading at \$879. If the bond has 15% probability of default and payment in default is \$700, calculate the expected yield on the bond

- (a) 5%
- (b) 12.66%
- (c) 19.45%
- (d) 15%
- (e) 13.48%

47. **2 points**

A corporate bond has a one-year maturity. The bond pays an interest of \$50 and principal of \$1,000 at the time of maturity. If the bond has a 10% probability of default and the payment in default is \$400, and an investor buys the bond for \$907.14. The yield on government bonds is 6%. Calculate the yield spread of the bond

- (a) 8.58%
- (b) 5.00%
- (c) 6.34%
- (d) 2.58%
- (e) 3.84%

48. **2 points**

The US government agrees to guarantee a bond issue planned by Demurrage Associates. The value of this guarantee is:

- I) Value of the loan with guarantee minus value of the loan without guarantee
- II) A subsidy to equity investors in the firm issuing guaranteed (and therefore cheaper) debt
- III) A gain to the buyers of the bonds
- IV) Equal to the value of a put option on the firm's assets with an exercise price equal to the bond's face value

- (a) I and III only
- (b) II and IV only
- (c) I, II, and IV only
- (d) I, III and IV only
- (e) I, II, III and IV

49. **2 points**

A convertible bond issue by a firm can be thought of as:

- I) Selling straight bonds plus a call option.
- II) Selling straight bonds.
- III) Selling straight bonds and buying a put option.
- IV) Selling common stock and a call option.
- V) Selling straight bonds and buying a call option

- (a) I only
- (b) II only
- (c) III only
- (d) II and IV only
- (e) III and V only

50. **2 points**

Long-term Bonds that are unsecured obligations of a company are called

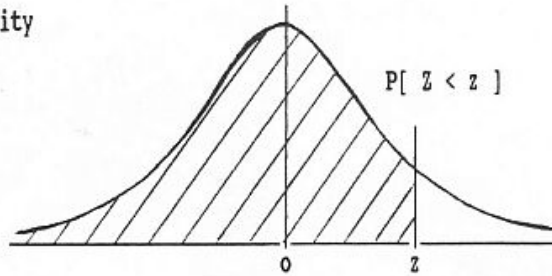
- (a) Indentures
- (b) Debentures
- (c) Mortgage Bonds
- (d) Bearer Bonds
- (e) Treasury Bills

STANDARD STATISTICAL TABLES

1. Areas under the Normal Distribution

The table gives the cumulative probability up to the standardised normal value z i.e.

$$P[Z < z] = \int_{-\infty}^z \frac{1}{\sqrt{2\pi}} \exp(-\frac{1}{2}Z^2) dZ$$



z	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	0.5000	0.5040	0.5080	0.5120	0.5159	0.5199	0.5239	0.5279	0.5319	0.5359
0.1	0.5398	0.5438	0.5478	0.5517	0.5557	0.5596	0.5636	0.5675	0.5714	0.5753
0.2	0.5793	0.5832	0.5871	0.5910	0.5948	0.5987	0.6026	0.6064	0.6103	0.6141
0.3	0.6179	0.6217	0.6255	0.6293	0.6331	0.6368	0.6406	0.6443	0.6480	0.6517
0.4	0.6554	0.6591	0.6628	0.6664	0.6700	0.6736	0.6772	0.6808	0.6844	0.6879
0.5	0.6915	0.6950	0.6985	0.7019	0.7054	0.7088	0.7123	0.7157	0.7190	0.7224
0.6	0.7257	0.7291	0.7324	0.7357	0.7389	0.7422	0.7454	0.7486	0.7517	0.7549
0.7	0.7580	0.7611	0.7642	0.7673	0.7704	0.7734	0.7764	0.7794	0.7823	0.7854
0.8	0.7881	0.7910	0.7939	0.7967	0.7995	0.8023	0.8051	0.8078	0.8106	0.8133
0.9	0.8159	0.8186	0.8212	0.8238	0.8264	0.8289	0.8315	0.8340	0.8365	0.8389
1.0	0.8413	0.8438	0.8461	0.8485	0.8508	0.8531	0.8554	0.8577	0.8599	0.8621
1.1	0.8643	0.8665	0.8686	0.8708	0.8729	0.8749	0.8770	0.8790	0.8804	0.8830
1.2	0.8849	0.8869	0.8888	0.8907	0.8925	0.8944	0.8962	0.8980	0.8997	0.9015
1.3	0.9032	0.9049	0.9066	0.9082	0.9099	0.9115	0.9131	0.9147	0.9162	0.9177
1.4	0.9192	0.9207	0.9222	0.9236	0.9251	0.9265	0.9279	0.9292	0.9306	0.9319
1.5	0.9332	0.9345	0.9357	0.9370	0.9382	0.9394	0.9406	0.9418	0.9429	0.9441
1.6	0.9452	0.9463	0.9474	0.9484	0.9495	0.9505	0.9515	0.9525	0.9535	0.9545
1.7	0.9554	0.9564	0.9573	0.9582	0.9591	0.9599	0.9608	0.9616	0.9625	0.9633
1.8	0.9641	0.9649	0.9656	0.9664	0.9671	0.9678	0.9686	0.9693	0.9699	0.9706
1.9	0.9713	0.9719	0.9726	0.9732	0.9738	0.9744	0.9750	0.9756	0.9761	0.9767
2.0	0.9773	0.9778	0.9783	0.9788	0.9793	0.9798	0.9803	0.9808	0.9812	0.9817
2.1	0.9821	0.9826	0.9830	0.9834	0.9838	0.9842	0.9846	0.9850	0.9854	0.9857
2.2	0.9861	0.9865	0.9868	0.9871	0.9874	0.9878	0.9881	0.9884	0.9887	0.9890
2.3	0.9893	0.9896	0.9898	0.9901	0.9904	0.9906	0.9909	0.9911	0.9913	0.9916
2.4	0.9918	0.9920	0.9922	0.9924	0.9927	0.9929	0.9931	0.9932	0.9934	0.9936
2.5	0.9938	0.9940	0.9941	0.9943	0.9945	0.9946	0.9948	0.9949	0.9951	0.9952
2.6	0.9953	0.9955	0.9956	0.9957	0.9959	0.9960	0.9961	0.9962	0.9963	0.9964
2.7	0.9965	0.9966	0.9967	0.9968	0.9969	0.9970	0.9971	0.9972	0.9973	0.9974
2.8	0.9974	0.9975	0.9976	0.9977	0.9977	0.9978	0.9979	0.9980	0.9980	0.9981
2.9	0.9981	0.9982	0.9982	0.9983	0.9984	0.9984	0.9985	0.9985	0.9986	0.9986
z	3.00	3.10	3.20	3.30	3.40	3.50	3.60	3.70	3.80	3.90
P	0.9986	0.9990	0.9993	0.9995	0.9997	0.9998	0.9998	0.9999	0.9999	1.0000