kasneb

**ATD LEVEL II**

**FUNDAMENTALS OF FINANCE**

**TUESDAY: 27 November 2018.** **Time Allowed: 3 hours.**

**Answer ALL questions. Marks allocated to each question are shown at the end of the question. Show ALL your workings.**

## QUESTION ONE

(a) Differentiate between "primary market" and "secondary market". (4 marks)

(b) In relation to Islamic finance, explain four sources of finance. (8 marks)

(c) A businessman wants to save for the university education of his son. The businessman estimates that the education expenses will be Sh.1 million per year for four years when his son joins university in 16 years time. The expenses will be payable at the beginning of the years. He expects the annual interest rate of 8% over the next two decades. (Assume that the deposit is made at the end of the year).

**Required:**
Calculate the amount of money that he should deposit in the bank each year for the next 15 years to take care of his son's university education expenses. (4 marks)

(d) Baldwin Ronny borrowed Sh.5 million from a bank at the rate of 15% per annum. The loan is to be repaid in equal instalments at the end of each year for the next three years. Interest on the loan is to be paid on a reducing balance basis.

**Required:**
Prepare a loan amortisation schedule. (4 marks)
**(Total: 20 marks)**

## QUESTION TWO

(a) Outline two reasons for the time preference for money. (2 marks)

(b) Explain four factors to be considered while formulating the dividend policy. (8 marks)

(c) The following is an extract from the statement of financial position of EPSY Ltd. as at 30 June 2018:

| | **Sh."000"** |
|---|---|
| Ordinary shares of Sh.50 each | 5,200 |
| Reserves | 4,850 |
| 9% preference shares of Sh.100 each | 4,500 |
| 14% loan notes | 5,000 |
| Total long-term funds | 19,550 |

**Additional information:**
1. The ordinary shares are quoted at Sh.80 per share. Ordinary shareholders expect cash dividend of Sh.4 per share and a dividend growth at the rate of 12% at the end of every year.
2. The preference shares which are unredeemable are quoted at Sh.72 per share.
3. The loan notes are quoted at par.
4. The corporate rate of tax is 33% per annum.

**Required:**
The weighted average cost of capital using market value. (10 marks)
**(Total: 20 marks)**

**QUESTION THREE**

(a) Explain three reasons for the regulation of financial markets in your country. (6 marks)

(b) The following is an extract from the financial statements of Takuy Ltd. for the year ended 31 December 2016 and 2017:

| | **Year 2017** |
|---|---|
| | **Sh. "Million"** |
| Sales | 80 |
| Cost of sales | 56 |

| | **Year 2016** | **Year 2017** |
|---|---|---|
| | **Sh. "Million"** | **Sh. "Million"** |
| Inventory | 9 | 12 |
| Accounts receivable | 12 | 16 |
| Accounts payable | 7 | 10 |

The financial year for Takuy Ltd. has 365 days.

**Required:**

Calculate the following:

(i) Operating cycle. (4 marks)

(ii) Cash operating cycle. (2 marks)

(c) Jimia Brothers have provided the following information regarding their business:

1. The estimated sales are Sh.50,000 in December 2018, Sh.55,000 in January 2019 and Sh.60,000 in February 2019. All sales will be in cash.
2. Their estimated purchases are Sh.20,000 in December 2018, Sh.22,000 in January 2019 and Sh.25,000 in February 2019. The payments for the purchases will be made after a lag of one month. Outstanding on the account of purchases in November 2018 is Sh.22,000.
3. The rent per month is Sh.5,000.
4. Salaries and other expenses, payable in cash are expected to be Sh.15,000 in December 2018, Sh.18,000 in January 2019 and Sh.20,000 in February 2019.
5. They expect to buy furniture worth Sh.25,000 on cash payment in January 2019.
6. The cash balance at present is Sh.5,000. Their target cash balance, however is Sh.8,000.

**Required:**

Prepare a statement showing the surplus or deficit in relation to the minimum cash balance required. (8 marks)

**(Total: 20 marks)**

**QUESTION FOUR**

(a) Distinguish between "internal sources of finance" and "external sources of finance", giving an example in each case. (4 marks)

(b) Outline four advantages of retained earnings as a source of finance. (4 marks)

(c) Mahdady Ltd. are evaluating two mutually exclusive projects, x and y.

The details of the projects are given as follows:

**Project x:**

The cost of project is Sh.2,000,000. It is expected to generate an annual net cash inflow of Sh.250,000 each year to perpetuity.

**Project y:**

This project will cost Sh.1,500,000. It is expected to have a useful life of 3 years with a scrap value of Sh.300,000 after 3 years.

This investment will require an initial investment of working capital of Sh.200,000 at the start (Year 0) which will however be recovered at the end of the asset's useful life.

The estimated pre-tax cash flow from this project excluding provision for depreciation in each year are given as follows:

| Year: | 1 | 2 | 3 |
|---|---|---|---|
| | Sh."000" | Sh."000" | Sh."000" |
| Pre-tax cash flow | 1,200 | 1,400 | 1,300 |

**Additional information:**
1. The firm provides for depreciation on a straight line basis.
2. Cost of capital is 10% and the corporation tax rate applicable is 30%.

**Required:**
(i) Net present value (NPV) for project x and y. (10 marks)

(ii) Advise the company on which project to undertake. (2 marks)
**(Total: 20 marks)**

## QUESTION FIVE
(a) State four causes of agency conflict between shareholders and independent auditors. (4 marks)

(b) Citing three reasons, explain why firms should focus on value maximisation as their main objective instead of profit maximisation. (6 marks)

(c) Harold Mutiso bought shares of ABC Ltd. at a price of Sh.40 each. The forecasted market price for each share and dividend payable on each share in each year over the next three years from now are given as follows:

| Year | Market price per share (MPS) Sh. | Dividend per share (DPS) Sh. |
|---|---|---|
| 1 | 42 | 2 |
| 2 | 44 | 2.5 |
| 3 | 45 | 3.5 |

**Required:**
(i) Expected rate of return from the shares. (4 marks)

(ii) Standard deviation of return. (4 marks)

(iii) Coefficient of variation. (2 marks)
**(Total: 20 marks)**

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## Present Value of 1 Received at the End of $n$ Periods:

$$PVIF_{r,n} = 1/(1+r)^n = (1+r)^{-n}$$

| Period | 1% | 2% | 3% | 4% | 5% | 6% | 7% | 8% | 9% | 10% | 12% | 14% | 15% | 16% | 18% | 20% | 24% | 28% | 32% | 36% |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .9901 | .9804 | .9709 | .9615 | .9524 | .9434 | .9346 | .9259 | .9174 | .9091 | .8929 | 8772 | 8696 | .8621 | .8475 | .8333 | .8065 | .7813 | .7576 | .7353 |
| 2 | .9803 | .9612 | .9426 | .9246 | .9070 | .8900 | .8734 | .8573 | .8417 | .8264 | .7972 | 7695 | .7561 | .7432 | .7182 | .6944 | .6504 | .6104 | 5739 | .5407 |
| 3 | .9706 | .9423 | .9151 | .8890 | .8638 | .8396 | .8163 | .7938 | .7722 | .7513 | .7118 | 6750 | 6575 | .6407 | .6086 | .5787 | .5245 | .4768 | 4348 | 3975 |
| 4 | .9610 | .9238 | .8885 | .8548 | .8227 | .7921 | .7629 | .7350 | .7084 | .6830 | .6355 | .5921 | .5718 | .5523 | .5158 | .4823 | .4230 | .3725 | .3294 | 2923 |
| 5 | .9515 | .9057 | .8626 | .8219 | .7835 | .7473 | .7130 | .6806 | .6499 | .6209 | .5674 | 5194 | .4972 | .4761 | .4371 | .4019 | .3411 | 2910 | 2495 | .2149 |
| 6 | .9420 | .8880 | .8375 | .7903 | .7462 | .7050 | .6663 | .6302 | .5963 | .5645 | .5066 | .4556 | .4323 | .4104 | .3704 | .3349 | .2751 | .2274 | .1890 | .1580 |
| 7 | .9327 | .8706 | .8131 | .7599 | .7107 | .6651 | .6227 | .5835 | .5470 | .5132 | .4523 | .3996 | .3759 | .3538 | .3139 | .2791 | .2218 | .1776 | .1432 | .1162 |
| 8 | .9235 | .8535 | .7894 | .7307 | .6768 | .6274 | .5820 | .5403 | .5019 | .4665 | .4039 | .3506 | .3269 | .3050 | .2660 | .2326 | .1789 | .1388 | .1085 | .0854 |
| 9 | .9143 | .8368 | .7664 | .7026 | .6446 | .5919 | .5439 | .5002 | .4604 | .4241 | .3606 | 3075 | .2843 | .2630 | .2255 | .1938 | .1443 | .1084 | .0822 | .0628 |
| 10 | .9053 | .8203 | .7441 | .6756 | .6139 | .5584 | .5083 | .4632 | .4224 | .3855 | .3220 | .2697 | .2472 | .2267 | .1911 | .1615 | .1164 | .0847 | .0623 | .0462 |
| 11 | .8963 | .8043 | .7224 | .6496 | .5847 | .5268 | .4751 | .4289 | .3875 | .3505 | .2875 | .2366 | .2149 | .1954 | .1619 | .1346 | .0938 | .0662 | .0472 | .0340 |
| 12 | .8874 | .7885 | .7014 | .6246 | .5568 | .4970 | .4440 | .3971 | .3555 | .3186 | .2567 | .2076 | .1869 | 1685 | .1372 | .1122 | .0757 | .0517 | .0357 | .0250 |
| 13 | .8787 | .7730 | .6810 | .6006 | .5303 | .4688 | .4150 | .3677 | .3262 | .2897 | .2292 | .1821 | .1625 | .1452 | .1163 | .0935 | .0610 | .0404 | .0271 | .0184 |
| 14 | .8700 | .7579 | .6611 | .5775 | .5051 | .4423 | .3878 | .3405 | .2992 | .2633 | .2046 | .1597 | .1413 | .1252 | .0985 | .0779 | .0492 | .0316 | .0205 | .0135 |
| 15 | .8613 | .7430 | .6419 | .5553 | .4810 | .4173 | .3624 | 3152 | .2745 | .2394 | .1827 | 1401 | .1229 | .1079 | .0835 | .0649 | .0397 | .0247 | .0155 | 0099 |
| 16 | .8528 | .7284 | .6232 | .5339 | .4581 | .3936 | .3387 | .2919 | .2519 | .2176 | .1631 | .1229 | 1069 | .0930 | .0708 | .0541 | .0320 | .0193 | .0118 | 0073 |
| 17 | .8444 | .7142 | .6050 | .5134 | .4363 | .3714 | .3166 | .2703 | .2311 | .1978 | .1456 | .1078 | .0929 | .0802 | .0600 | .0451 | .0258 | .0150 | .0089 | 0054 |
| 18 | .8360 | .7002 | .5874 | .4936 | .4155 | .3503 | .2959 | .2502 | .2120 | .1799 | .1300 | .0946 | .0808 | .0691 | .0508 | .0376 | .0208 | .0118 | .0068 | .0039 |
| 19 | .8277 | .6864 | .5703 | .4746 | .3957 | .3305 | .2765 | .2317 | .1945 | .1635 | .1161 | .0829 | .0703 | .0596 | .0431 | .0313 | .0168 | .0092 | .0051 | .0029 |
| 20 | .8195 | .6730 | .5537 | .4564 | .3769 | .3118 | .2584 | .2145 | .1784 | 1486 | 1037 | .0728 | .0611 | .0514 | .0365 | .0261 | .0135 | .0072 | .0039 | .0021 |
| 25 | .7798 | .6095 | .4776 | .3751 | .2953 | .2330 | .1842 | .1460 | .1160 | .0923 | .0588 | .0378 | .0304 | .0245 | .0160 | .0105 | .0046 | .0021 | .0010 | 0005 |
| 30 | .7419 | .5521 | .4120 | .3083 | .2314 | .1741 | .1314 | .0994 | .0754 | .0573 | .0334 | .0196 | .0151 | .0116 | .0070 | .0042 | .0016 | .0006 | .0002 | .0001 |
| 40 | .6717 | .4529 | .3066 | .2083 | .1420 | .0972 | .0668 | 0460 | .0318 | .0221 | .0107 | .0053 | .0037 | .0026 | .0013 | .0007 | .0002 | .0001 | * | * |
| 50 | .6080 | .3715 | .2281 | .1407 | .0872 | .0543 | .0339 | .0213 | .0134 | .0085 | .0035 | .0014 | .0009 | .0006 | .0003 | .0001 | * | * | * | * |
| 60 | .5504 | .3048 | .1697 | .0951 | .0535 | .0303 | .0173 | .0099 | .0057 | .0033 | .0011 | .0004 | .0002 | .0001 | * | * | * | * | * | * |

* The factor is zero to four decimal places

## Present Value of an Annuity of 1 Per Period for n Periods:

$$PVIF_{r,t} = \sum_{t=1}^{n} \frac{1}{(1+r)^t} = \frac{1 - \frac{1}{(1+r)^n}}{r}$$

| Number of payments | 1% | 2% | 3% | 4% | 5% | 6% | 7% | 8% | 9% | 10% | 12% | 14% | 15% | 16% | 18% | 20% | 24% | 28% | 32% |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.9901 | 0.9804 | 0.9709 | 0.9615 | 0.9524 | 0.9434 | 0.9346 | 0.9259 | 0.9174 | 0.9091 | 0.8929 | 0.8772 | 0.8696 | 0.8621 | 0.8475 | 0.8333 | 0.8065 | 0.7813 | 0.7576 |
| 2 | 1.9704 | 1.9416 | 1.9135 | 1.8861 | 1.8594 | 1.8334 | 1.8080 | 1.7833 | 1.7591 | 1.7355 | 1.6901 | 1.6467 | 1.6257 | 1.6052 | 1.5656 | 1.5278 | 1.4568 | 1.3916 | 1.3315 |
| 3 | 2.9410 | 2.8839 | 2.8286 | 2.7751 | 2.7232 | 2.6730 | 2.6243 | 2.5771 | 2.5313 | 2.4869 | 2.4018 | 2.3216 | 2.2832 | 2.2459 | 2.1743 | 2.1065 | 1.9813 | 1.8684 | 1.7663 |
| 4 | 3.9020 | 3.8077 | 3.7171 | 3.6299 | 3.5460 | 3.4651 | 3.3872 | 3.3121 | 3.2397 | 3.1699 | 3.0373 | 2.9137 | 2.8550 | 2.7982 | 2.6901 | 2.5887 | 2.4043 | 2.2410 | 2.0957 |
| 5 | 4.8534 | 4.7135 | 4.5797 | 4.4518 | 4.3295 | 4.2124 | 4.1002 | 3.9927 | 3.8897 | 3.7908 | 3.6048 | 3.4331 | 3.3522 | 3.2743 | 3.1272 | 2.9906 | 2.7454 | 2.5320 | 2.3452 |
| 6 | 5.7955 | 5.6014 | 5.4172 | 5.2421 | 5.0757 | 4.9173 | 4.7665 | 4.6229 | 4.4859 | 4.3553 | 4.1114 | 3.8887 | 3.7845 | 3.6847 | 3.4976 | 3.3255 | 3.0205 | 2.7594 | 2.5342 |
| 7 | 6.7282 | 6.4720 | 6.2303 | 6.0021 | 5.7864 | 5.5824 | 5.3893 | 5.2064 | 5.0330 | 4.8684 | 4.5638 | 4.2883 | 4.1604 | 4.0386 | 3.8115 | 3.6046 | 3.2423 | 2.9370 | 2.6775 |
| 8 | 7.6517 | 7.3255 | 7.0197 | 6.7327 | 6.4632 | 6.2098 | 5.9713 | 5.7466 | 5.5348 | 5.3349 | 4.9676 | 4.6389 | 4.4873 | 4.3436 | 4.0776 | 3.8372 | 3.4212 | 3.0758 | 2.7860 |
| 9 | 8.5660 | 8.1622 | 7.7861 | 7.4353 | 7.1078 | 6.8017 | 6.5152 | 6.2469 | 5.9952 | 5.7590 | 5.3282 | 4.9464 | 4.7716 | 4.6065 | 4.3030 | 4.0310 | 3.5655 | 3.1842 | 2.8681 |
| 10 | 9.4713 | 8.9826 | 8.5302 | 8.1109 | 7.7217 | 7.3601 | 7.0236 | 6.7101 | 6.4177 | 6.1446 | 5.6502 | 5.2161 | 5.0188 | 4.8332 | 4.4941 | 4.1925 | 3.6819 | 3.2689 | 2.9304 |
| 11 | 10.3676 | 9.7868 | 9.2526 | 8.7605 | 8.3064 | 7.8869 | 7.4987 | 7.1390 | 6.8052 | 6.4951 | 5.9377 | 5.4527 | 5.2337 | 5.0286 | 4.6560 | 4.3271 | 3.7757 | 3.3351 | 2.9776 |
| 12 | 11.2551 | 10.5753 | 9.9540 | 9.3851 | 8.8633 | 8.3838 | 7.9427 | 7.5361 | 7.1607 | 6.8137 | 6.1944 | 5.6603 | 5.4206 | 5.1971 | 4.7932 | 4.4392 | 3.8514 | 3.3868 | 3.0133 |
| 13 | 12.1337 | 11.3484 | 10.6350 | 9.9856 | 9.3936 | 8.8527 | 8.3577 | 7.9038 | 7.4869 | 7.1034 | 6.4235 | 5.8424 | 5.5831 | 5.3423 | 4.9095 | 4.5327 | 3.9124 | 3.4272 | 3.0404 |
| 14 | 13.0037 | 12.1062 | 11.2961 | 10.5631 | 9.8986 | 9.2950 | 8.7455 | 8.2442 | 7.7862 | 7.3667 | 6.6282 | 6.0021 | 5.7245 | 5.4675 | 5.0081 | 4.6106 | 3.9616 | 3.4587 | 3.0609 |
| 15 | 13.8651 | 12.8493 | 11.9379 | 11.1184 | 10.3797 | 9.7122 | 9.1079 | 8.5595 | 8.0607 | 7.6061 | 6.8109 | 6.1422 | 5.8474 | 5.5755 | 5.0916 | 4.6755 | 4.0013 | 3.4834 | 3.0764 |
| 16 | 14.7179 | 13.5777 | 12.5611 | 11.6523 | 10.8378 | 10.1059 | 9.4466 | 8.8514 | 8.3126 | 7.8237 | 6.9740 | 6.2651 | 5.9542 | 5.6685 | 5.1624 | 4.7296 | 4.0333 | 3.5026 | 3.0882 |
| 17 | 15.5623 | 14.2919 | 13.1661 | 12.1657 | 11.2741 | 10.4773 | 9.7632 | 9.1216 | 8.5436 | 8.0216 | 7.1196 | 6.3729 | 6.0472 | 5.7487 | 5.2223 | 4.7746 | 4.0591 | 3.5177 | 3.0971 |
| 18 | 16.3983 | 14.9920 | 13.7535 | 12.6593 | 11.6896 | 10.8276 | 10.0591 | 9.3719 | 8.7556 | 8.2014 | 7.2497 | 6.4674 | 6.1280 | 5.8178 | 5.2732 | 4.8122 | 4.0799 | 3.5294 | 3.1039 |
| 19 | 17.2260 | 15.6785 | 14.3238 | 13.1339 | 12.0853 | 11.1581 | 10.3356 | 9.6036 | 8.9501 | 8.3649 | 7.3658 | 6.5504 | 6.1982 | 5.8775 | 5.3162 | 4.8435 | 4.0967 | 3.5386 | 3.1090 |
| 20 | 18.0456 | 16.3514 | 14.8775 | 13.5903 | 12.4622 | 11.4699 | 10.5940 | 9.8181 | 9.1285 | 8.5136 | 7.4694 | 6.6231 | 6.2593 | 5.9288 | 5.3527 | 4.8696 | 4.1103 | 3.5458 | 3.1129 |
| 25 | 22.0232 | 19.5235 | 17.4131 | 15.6221 | 14.0939 | 12.7834 | 11.6536 | 10.6748 | 9.8226 | 9.0770 | 7.8431 | 6.8729 | 6.4641 | 6.0971 | 5.4669 | 4.9476 | 4.1474 | 3.5640 | 3.1220 |
| 30 | 25.8077 | 22.3965 | 19.6004 | 17.2920 | 15.3725 | 13.7648 | 12.4090 | 11.2578 | 10.2737 | 9.4269 | 8.0552 | 7.0027 | 6.5660 | 6.1772 | 5.5168 | 4.9789 | 4.1601 | 3.5693 | 3.1242 |
| 40 | 32.8347 | 27.3555 | 23.1148 | 19.7928 | 17.1591 | 15.0463 | 13.3317 | 11.9246 | 10.7574 | 9.7791 | 8.2438 | 7.1050 | 6.6418 | 6.2335 | 5.5482 | 4.9966 | 4.1659 | 3.5712 | 3.1250 |
| 50 | 39.1961 | 31.4236 | 25.7298 | 21.4822 | 18.2559 | 15.7619 | 13.8007 | 12.2335 | 10.9617 | 9.9148 | 8.3045 | 7.1327 | 6.6605 | 6.2463 | 5.5541 | 4.9995 | 4.1666 | 3.5714 | 3.1250 |
| 60 | 44.9550 | 34.7609 | 27.6756 | 22.6235 | 18.9293 | 16.1614 | 14.0392 | 12.3766 | 11.0480 | 9.9672 | 8.3240 | 7.1401 | 6.6651 | 6.2402 | 5.5553 | 4.9999 | 4.1667 | 3.5714 | 3.1250 |

## Future Value Factor for an Ordinary Annuity

(Interest rate = r, Number of periods = n)

| n \ r | 1% | 2% | 3% | 4% | 5% | 6% | 7% | 8% | 9% | 10% | 11% | 12% | 13% | 14% | 15% | 16% | 17% |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| 2 | 2.0100 | 2.0200 | 2.0300 | 2.0400 | 2.0500 | 2.0600 | 2.0700 | 2.0800 | 2.0900 | 2.1000 | 2.1100 | 2.1200 | 2.1300 | 2.1400 | 2.1500 | 2.1600 | 2.1700 |
| 3 | 3.0301 | 3.0604 | 3.0909 | 3.1216 | 3.1525 | 3.1836 | 3.2149 | 3.2464 | 3.2781 | 3.3100 | 3.3421 | 3.3744 | 3.4069 | 3.4396 | 3.4725 | 3.5056 | 3.5389 |
| 4 | 4.0604 | 4.1216 | 4.1836 | 4.2465 | 4.3101 | 4.3746 | 4.4399 | 4.5061 | 4.5731 | 4.6410 | 4.7097 | 4.7793 | 4.8498 | 4.9211 | 4.9934 | 5.0665 | 5.1405 |
| 5 | 5.1010 | 5.2040 | 5.3091 | 5.4163 | 5.5256 | 5.6371 | 5.7507 | 5.8666 | 5.9847 | 6.1051 | 6.2278 | 6.3528 | 6.4803 | 6.6101 | 6.7424 | 6.8771 | 7.0144 |
| 6 | 6.1520 | 6.3081 | 6.4684 | 6.6330 | 6.8019 | 6.9753 | 7.1533 | 7.3359 | 7.5233 | 7.7156 | 7.9129 | 8.1152 | 8.3227 | 8.5355 | 8.7537 | 8.9775 | 9.2068 |
| 7 | 7.2135 | 7.4343 | 7.6625 | 7.8983 | 8.1420 | 8.3938 | 8.6540 | 8.9228 | 9.2004 | 9.4872 | 9.7833 | 10.0890 | 10.4047 | 10.7305 | 11.0668 | 11.4139 | 11.7720 |
| 8 | 8.2857 | 8.5830 | 8.8923 | 9.2142 | 9.5491 | 9.8975 | 10.2598 | 10.6366 | 11.0285 | 11.4359 | 11.8594 | 12.2997 | 12.7573 | 13.2328 | 13.7268 | 14.2401 | 14.7733 |
| 9 | 9.3685 | 9.7546 | 10.1591 | 10.5828 | 11.0266 | 11.4913 | 11.9780 | 12.4876 | 13.0210 | 13.5795 | 14.1640 | 14.7757 | 15.4157 | 16.0853 | 16.7858 | 17.5185 | 18.2847 |
| 10 | 10.4622 | 10.9497 | 11.4639 | 12.0061 | 12.5779 | 13.1808 | 13.8164 | 14.4866 | 15.1929 | 15.9374 | 16.7220 | 17.5487 | 18.4197 | 19.3373 | 20.3037 | 21.3215 | 22.3931 |
| 11 | 11.5668 | 12.1687 | 12.8078 | 13.4864 | 14.2068 | 14.9716 | 15.7836 | 16.6455 | 17.5603 | 18.5312 | 19.5614 | 20.6546 | 21.8143 | 23.0445 | 24.3493 | 25.7329 | 27.1999 |
| 12 | 12.6825 | 13.4121 | 14.1920 | 15.0258 | 15.9171 | 16.8699 | 17.8885 | 18.9771 | 20.1407 | 21.3843 | 22.7132 | 24.1331 | 25.6502 | 27.2707 | 29.0017 | 30.8502 | 32.8239 |
| 13 | 13.8093 | 14.6803 | 15.6178 | 16.6268 | 17.7130 | 18.8821 | 20.1406 | 21.4953 | 22.9534 | 24.5227 | 26.2116 | 28.0291 | 29.9847 | 32.0887 | 34.3519 | 36.7862 | 39.4040 |
| 14 | 14.9474 | 15.9739 | 17.0863 | 18.2919 | 19.5986 | 21.0151 | 22.5505 | 24.2149 | 26.0192 | 27.9750 | 30.0949 | 32.3926 | 34.8827 | 37.5811 | 40.5047 | 43.6720 | 47.1027 |
| 15 | 16.0969 | 17.2934 | 18.5989 | 20.0236 | 21.5786 | 23.2760 | 25.1290 | 27.1521 | 29.3609 | 31.7725 | 34.4054 | 37.2797 | 40.4175 | 43.8424 | 47.5804 | 51.6595 | 56.1101 |
| 16 | 17.2579 | 18.6393 | 20.1569 | 21.8245 | 23.6575 | 25.6725 | 27.8881 | 30.3243 | 33.0034 | 35.9497 | 39.1899 | 42.7533 | 46.6717 | 50.9804 | 55.7175 | 60.9250 | 66.6488 |
| 17 | 18.4304 | 20.0121 | 21.7616 | 23.6975 | 25.8404 | 28.2129 | 30.8402 | 33.7502 | 36.9737 | 40.5447 | 44.5008 | 48.8837 | 53.7391 | 59.1176 | 65.0751 | 71.6730 | 78.9792 |
| 18 | 19.6147 | 21.4123 | 23.4144 | 25.6454 | 28.1324 | 30.9057 | 33.9990 | 37.4502 | 41.3013 | 45.5992 | 50.3959 | 55.7497 | 61.7251 | 68.3941 | 75.8364 | 84.1407 | 93.4056 |
| 19 | 20.8109 | 22.8406 | 25.1169 | 27.6712 | 30.5390 | 33.7600 | 37.3790 | 41.4463 | 46.0185 | 51.1591 | 56.9395 | 63.4397 | 70.7494 | 78.9692 | 88.2118 | 98.6032 | 110.2846 |
| 20 | 22.0190 | 24.2974 | 26.8704 | 29.7781 | 33.0660 | 36.7856 | 40.9955 | 45.7620 | 51.1601 | 57.2750 | 64.2028 | 72.0524 | 80.9468 | 91.0249 | 102.4436 | 115.3797 | 130.0329 |
| 21 | 23.2392 | 25.7833 | 28.6765 | 31.9692 | 35.7193 | 39.9927 | 44.8652 | 50.4229 | 56.7645 | 64.0025 | 72.2651 | 81.6987 | 92.4699 | 104.7684 | 118.8101 | 134.8405 | 153.1385 |
| 22 | 24.4716 | 27.2990 | 30.5368 | 34.2480 | 38.5052 | 43.3923 | 49.0057 | 55.4568 | 62.8733 | 71.4027 | 81.2143 | 92.5026 | 105.4910 | 120.4360 | 137.6316 | 157.4150 | 180.1721 |
| 23 | 25.7163 | 28.8450 | 32.4529 | 36.6179 | 41.4305 | 46.9958 | 53.4361 | 60.8933 | 69.5319 | 79.5430 | 91.1479 | 104.6029 | 120.2048 | 138.2970 | 159.2764 | 183.6014 | 211.8013 |
| 24 | 26.9735 | 30.4219 | 34.4265 | 39.0826 | 44.5020 | 50.8156 | 58.1767 | 66.7648 | 76.7898 | 88.4973 | 102.1742 | 118.1552 | 136.8315 | 158.6586 | 184.1678 | 213.9776 | 248.8076 |
| 25 | 28.2432 | 32.0303 | 36.4593 | 41.6459 | 47.7271 | 54.8645 | 63.2490 | 73.1059 | 84.7009 | 98.3471 | 114.4133 | 133.3339 | 155.6196 | 181.8708 | 212.7930 | 249.2140 | 292.1049 |
| 26 | 29.5256 | 33.6709 | 38.5530 | 44.3117 | 51.1135 | 59.1564 | 68.6765 | 79.9544 | 93.3240 | 109.1818 | 127.9988 | 150.3339 | 176.8501 | 208.3327 | 245.7120 | 290.0883 | 342.7627 |
| 27 | 30.8209 | 35.3443 | 40.7096 | 47.0842 | 54.6691 | 63.7058 | 74.4838 | 87.3508 | 102.7231 | 121.0999 | 143.0786 | 169.3740 | 200.8406 | 238.4993 | 283.5688 | 337.5024 | 402.0323 |
| 28 | 32.1291 | 37.0512 | 42.9309 | 49.9676 | 58.4026 | 68.5281 | 80.6977 | 95.3388 | 112.9682 | 134.2099 | 159.8173 | 190.6989 | 227.9499 | 272.8892 | 327.1041 | 392.5028 | 471.3778 |
| 29 | 33.4504 | 38.7922 | 45.2189 | 52.9663 | 62.3227 | 73.6398 | 87.3465 | 103.9659 | 124.1354 | 148.6309 | 178.3972 | 214.5828 | 258.5834 | 312.0937 | 377.1697 | 456.3032 | 552.5121 |
| 30 | 34.7849 | 40.5681 | 47.5754 | 56.0849 | 66.4388 | 79.0582 | 94.4608 | 113.2832 | 136.3075 | 164.4940 | 199.0209 | 241.3327 | 293.1992 | 356.7868 | 434.7451 | 530.3117 | 647.4391 |
| 31 | 36.1327 | 42.3794 | 50.0027 | 59.3283 | 70.7608 | 84.8017 | 102.0730 | 123.3459 | 149.5752 | 181.9434 | 221.9132 | 271.2926 | 332.3151 | 407.7370 | 500.9569 | 616.1616 | 758.5038 |
| 32 | 37.4941 | 44.2270 | 52.5028 | 62.7015 | 75.2988 | 90.8898 | 110.2182 | 134.2135 | 164.0370 | 201.1378 | 247.3236 | 304.8477 | 376.5161 | 465.8202 | 577.1005 | 715.7475 | 888.4494 |
| 33 | 38.8690 | 46.1116 | 55.0778 | 66.2095 | 80.0638 | 97.3432 | 118.9334 | 145.9506 | 179.8003 | 222.2515 | 275.5292 | 342.4294 | 426.4632 | 532.0350 | 664.6655 | 831.2671 | 1040.486 |
| 34 | 40.2577 | 48.0338 | 57.7302 | 69.8579 | 85.0670 | 104.1838 | 128.2588 | 158.6267 | 196.9823 | 245.4767 | 306.8374 | 384.5210 | 482.9034 | 607.5199 | 765.3654 | 965.2698 | 1218.368 |
| 35 | 41.6603 | 49.9945 | 60.4621 | 73.6522 | 90.3203 | 111.4348 | 138.2369 | 172.3168 | 215.7108 | 271.0244 | 341.5896 | 431.6635 | 546.6808 | 693.5727 | 881.1702 | 1120.713 | 1426.491 |
| 36 | 43.0769 | 51.9944 | 63.2759 | 77.5983 | 95.8363 | 119.1209 | 148.9135 | 187.1021 | 236.1247 | 299.1268 | 380.1644 | 484.4631 | 618.7493 | 791.6729 | 1014.346 | 1301.027 | 1669.994 |
| 37 | 44.5076 | 54.0343 | 66.1742 | 81.7022 | 101.6281 | 127.2681 | 160.3374 | 203.0703 | 258.3759 | 330.0395 | 422.9825 | 543.5987 | 700.1867 | 903.5071 | 1167.498 | 1510.191 | 1954.894 |
| 38 | 45.9527 | 56.1149 | 69.1594 | 85.9703 | 107.7095 | 135.9042 | 172.5610 | 220.3159 | 282.6298 | 364.0434 | 470.5106 | 609.8305 | 792.2110 | 1030.998 | 1343.622 | 1752.822 | 2288.225 |
| 39 | 47.4123 | 58.2372 | 72.2342 | 90.4091 | 114.0950 | 145.0585 | 185.6403 | 238.9412 | 309.0665 | 401.4478 | 523.2667 | 684.0102 | 896.1984 | 1176.338 | 1546.165 | 2034.273 | 2678.224 |
| 40 | 48.8864 | 60.4020 | 75.4013 | 95.0255 | 120.7998 | 154.7620 | 199.6351 | 259.0565 | 337.8824 | 442.5926 | 581.8261 | 767.0914 | 1013.704 | 1342.025 | 1779.090 | 2360.757 | 3134.522 |
| 41 | 50.3752 | 62.6100 | 78.6633 | 99.8265 | 127.8398 | 165.0477 | 214.6096 | 280.7810 | 369.2919 | 487.8518 | 646.8269 | 860.1424 | 1146.486 | 1530.909 | 2046.954 | 2739.478 | 3668.391 |
| 42 | 51.8790 | 64.8622 | 82.0232 | 104.8196 | 135.2318 | 175.9505 | 230.6322 | 304.2435 | 403.5281 | 537.6370 | 718.9779 | 964.3595 | 1296.529 | 1746.236 | 2354.997 | 3178.795 | 4293.017 |
| 43 | 53.3978 | 67.1595 | 85.4839 | 110.0124 | 142.9933 | 187.5076 | 247.7765 | 329.5830 | 440.8457 | 592.4007 | 799.0655 | 1081.083 | 1466.078 | 1991.709 | 2709.246 | 3688.402 | 5023.830 |
| 44 | 54.9318 | 69.5027 | 89.0484 | 115.4129 | 151.1430 | 199.7580 | 266.1209 | 356.9496 | 481.5218 | 652.6408 | 887.9627 | 1211.813 | 1657.668 | 2271.548 | 3116.633 | 4279.546 | 5878.881 |
| 45 | 56.4811 | 71.8927 | 92.7199 | 121.0294 | 159.7002 | 212.7435 | 285.7493 | 386.5056 | 525.8587 | 718.9048 | 986.6386 | 1358.230 | 1874.165 | 2590.565 | 3585.128 | 4965.274 | 6879.291 |