



FACULTY/COLLEGE	College of Business and Economics
SCHOOL	School of Accounting
DEPARTMENT	Commercial Accounting
CAMPUS(ES)	SWC
MODULE NAME	Cost & Financial Management 3B
MODULE CODE	CFM33B3
SEMESTER	Second
ASSESSMENT OPPORTUNITY, MONTH AND YEAR	Supplementary Summative Assessment January 2020

ASSESSMENT DATE	January 2020	SESSION	
ASSESSOR(S)	M Janse van Rensburg, L Joubert, K Matshego		
MODERATOR(S)	L Boyce (internal), M Odendaal (external)		
DURATION	3 hours (180 min)	TOTAL MARKS	100

NUMBER OF PAGES OF QUESTION PAPER (Including cover page)	11
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INFORMATION / INSTRUCTIONS:

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- **Submit this question paper inside your script.**
 - This is a closed-book assessment.
 - You may use silent, non-programmable calculators.
 - Where applicable, round all calculations to two decimals, unless stipulated otherwise.
 - **Indicate your index number (next to your name on the attendance register) next to the UJ logo on all your scripts.**
 - Read the questions carefully and answer only what is required.
 - Number your answers clearly and correctly as per the question paper.
 - Write neatly and legibly on both sides of the paper in the answer book, starting on the first page.
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QUESTION 1**[16 MARKS]****Multi-product CVP****29 Minutes**

Blue Drop Ltd is a pool maintenance company that operates on a monthly contract basis as well as once-off call outs. Blue Drop's contract clients pay less per service than once-off clients because of a discount granted for their loyalty. Contract clients pay R1 200 per month for weekly maintenance, while once-off clients pay 10% more per service. Exceptionally large pools are priced at R370 per service. The monthly budget (assume four weeks per month) for Blue Drop Ltd has yielded the following information:

	CONTRACT	ONCE-OFF	LARGE POOL
Number of services	120	30	6
Cleaning chemicals per service	R15	R17	R22
Cleaning tools per service	R20	R20	R20
Number of workers per service	2	2	3
Labour time per service	1½ hours	1½ hours	1½ hours
Variable overheads per service	R12	R12	R12

Workers are remunerated at R45 per hour. Fixed manufacturing overheads are allocated to products in a ratio of 3:2:1: contract customers R3 750; once-off customers R2 500; and large pool R1 250.

REQUIRED:

- 1.1 Calculate the monthly break-even point for Blue Drop Ltd, in units, for each product and in total. **(11)**
- 1.2 How many units should Blue Drop Ltd sell to reach a target profit before tax of R15 000 per month? Present your answer in a marginal costing income statement format. **(5)**

QUESTION 2**[19 MARKS]****Limiting factors****34 Minutes**

Jake makes wooden toys that he sells at a local street market on weekends. He makes wooden trains, cars and a pram for dolls. The sales of the pram have been much slower recently compared to the sales of the other two products, although it is priced at half the price of a train.

The following information is available per unit:

	Train	Car	Pram
Selling price per unit	R220	R130	?
Material:			
Wood (R80 per meter)	R60	R32	R24
Wheels	R25	R15	R7
Labour rate per hour	R30	R30	R30
Labour time per unit	3 hours	1.5 hours	1.25 hours
Variable overheads per unit	R22	R22	R22

Jake's usual demand on a Saturday is nine trains, seven cars and two prams. He makes toys eight hours a day for five days a week and sells these toys on Saturdays. Jake will be unable to make toys next Friday due to a family event. Only nine meters of wood will be available next week.

REQUIRED:

- 2.1 Calculate the optimal production plan for Jakes for **next week**. **(19)**

QUESTION 3**[10MARKS]****Special order****18 Minutes**

Suzie makes her own 100% natural hair conditioner. She currently produces 700 pots per month. The following information is available for a typical month:

	Per pot
Selling price	R120
Direct material	R40
Direct labour	R15
Variable manufacturing overheads	R7
Fixed manufacturing overheads (770 units maximum capacity)	R7 000

Zoey would like to order 100 pots for a Woman's Day event. She would like to print a motivational quote on the pots. Zoey is requesting to pay R30 less per pot than the current selling price. Suzie will need to design and print these stickers at an additional cost of R5 per pot.

REQUIRED:

- 3.1 Should Suzie accept the one-time special order? Show your calculations and indicate both relevant and irrelevant items. **(8)**
- 3.2 At what price will Suzie be indifferent between accepting the special order and continuing to sell the conditioner to her current customers? **(2)**

QUESTION 4**[30 MARKS]****Capital budgeting****54 Minutes**

Music Ltd ("Music") is a recording company that manages music artists and sell their music. Music is very successful in the industry, and almost every artist aspires to sign with them. The company is always looking for an opportunity to manage talented artists.

It is the company's policy to only contract artists whose music net sales yields a net present value above the company's cost of capital. The company's capital structure consists of:

- Music issued 500 000 ordinary shares at a par value of R12 per share. Music's shares are currently trading at R23. The return on government bonds is 13.8% at present. After assessment of the political, economic and country risks, the shareholders have stated that they require a premium of 15.2% to compensate them for the risk of investing in Music.
- The company has long-term debt with an outstanding amount of R8 000 000. The loan carries an interest of 12% per annum, and interest payments are tax-deductible.

Music is interested in offering a five-year recording contract to Y2K, a talented, but unknown music artist. The following information was gathered before the contract was offered:

- Music will offer Y2K an upfront payment of R50 million.
- It is expected that Y2K will sell 250 000 albums each year for R90 per album. The price of each album is expected to increase by 10% year on year.
- Music will have to pay R2 million a year to Apple for Y2K's albums to be loaded on iTunes.
- Y2K's music requires a dedicated sound engineer. The engineer will be paid R60 000 per month with the engineer's salary increasing by 8% per year.
- You may assume an income tax rate of 28%.

REQUIRED:

- 4.1 Calculate the weighted average cost of capital (WACC). Music prefers to use market value to calculate WACC. **(6)**
- 4.2 Use the net present value method to determine whether Music should offer a recording contract to Y2K. Show all calculations and round your calculations off to the nearest Rand where applicable. You may assume a WACC of 18%. **(20)**
- 4.3 Advise whether Music should enter into the contract with Y2K. Discuss other factors that could influence the decision. **(4)**

QUESTION 5**[10 MARKS]****MCQ – All topics****18 Minutes**

Choose the correct option (**letter**) and write it next to the question number in your script.

- 5.1 Losas sells three chemicals: petrol, septine, and tridol. Petrol's unit contribution margin is higher than septine's, which is higher than tridol's. Which one of the following events is most likely to increase the company's overall break-even point? **(1)**
- a. All these options will increase the company's overall break-even point.
 - b. A decrease in tridol's selling price.
 - c. An increase in the overall market demand for septine.
 - d. A change in the relative market demand for the products, with the increase favouring petrol relative to septine and tridol.
- 5.2 Consider a decision facing a company of either accepting or rejecting a special offer for one of its products. A cost that is not relevant is: **(1)**
- a. Direct material.
 - b. Variable manufacturing overheads.
 - c. Avoidable fixed manufacturing overhead if the special offer is accepted.
 - d. Common fixed manufacturing overhead that will continue if the special offer is not accepted.
- 5.3 To maximise profits when a production constraint exists, a company should: **(1)**
- a. Promote those products having the highest unit contribution margins.
 - b. Promote those products having the highest contribution margin ratios.
 - c. Promote those products having the highest unit contribution margin per unit of constrained resource.
 - d. Both a and b are correct.
- 5.4 The opportunity cost of making a product in a factory, with no excess capacity, is the : **(1)**
- a. Variable manufacturing cost of the product.
 - b. Fixed manufacturing cost of the product.
 - c. Cost of the production given up to manufacture the product.
 - d. Contribution foregone from the best alternative use of the capacity required.
- 5.5 Only the variable costs identified with a product are relevant in a decision concerning whether to eliminate a product. **(1)**
- a. True
 - b. False

- 5.6 The cost of a resource that has no alternative use in a make-or-buy decision problem has an opportunity cost of zero. **(1)**
- a. True
 - b. False
- 5.7 When the net present value method is used, the internal rate of return is the discount rate used to compute the net present value of a product. **(1)**
- a. True
 - b. False
- 5.8 An increase in the discount rate: **(1)**
- a. Will increase the present value of future cash flows.
 - b. Will not affect the net present value.
 - c. Will reduce the present value of future cash flows.
 - d. Is one method of compensating for reduced risk.
- 5.9 Some investment projects require that a company expand its working capital to service the greater volume of business that will be generated. Under the net present value method, the investment of working capital should be treated as: **(1)**
- a. Initial cash outflow for which no discounting is necessary.
 - b. A future cash inflow for which discounting is necessary.
 - c. Both a and b.
 - d. Irrelevant to the net present value analysis.
- 5.10 A weakness of the internal rate of return method for screening investment projects is that it: **(1)**
- a. Does not consider the time value of money.
 - b. Implicitly assumes that the company can reinvest the cash flows from the project at the company's discount rate.
 - c. Implicitly assumes that the company can reinvest the cash flows from the project at the internal rate of return.
 - d. Does not take into account all of the cash flows from a project.

QUESTION 6**[15 MARKS]****Capital budgeting****27 Minutes**

Freeze Memories Ltd is a printing company that specialises in the printing of photobooks. Photobooks are becoming increasingly popular, and Freeze Memories considers buying three industrial printers to satisfy their need. Alternatively, Freeze Memories have to consider outsourcing. The following information is available for the five years:

- It will cost R250 000 for the first year to outsource the printing. The outsourcing cost will increase after that by 5% each year.
- Freeze Memories will purchase three industrial printers at a total cost of R750 000. The industrial printers have an economic life of five years.
- The maintenance cost of the industrial printers is expected to be R33 000, R35 000, R36 000, R38 000, R40 000 for the five years respectively.
- The operator's cost is expected to be R8 000, R13 000, R15 000, R16 000 and R18 000 for the five years respectively.
- The other costs are expected to be R10 000, R15 000, R20 000, R16 000 and R22 000 for the five years respectively.
- Depreciation is on a straight-line basis and is not included in other costs.
- The scrap value of the industrial printers will be R70 000 at the end of five years.
- Cost of capital is 12%.
- Assume that all the cash flows take place at the end of the year, except for the initial investment.

REQUIRED:

- 6.1 Calculate the payback period and the accounting rate of return (use the average investment as the denominator) for the industrial printer. Start your calculation with a table showing the net operational cash saving to be made by Freeze Memories Ltd over the five-year life of the investment.

(15)**Paper total [100]**

PRESENT VALUE TABLES

Present value of R1 due at the end of n periods

Period	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	11%	12%	13%	14%	15%	16%	17%	18%	19%	20%	21%	22%
1	0.9901	0.9804	0.9709	0.9615	0.9524	0.9434	0.9346	0.9259	0.9174	0.9091	0.9009	0.8929	0.8850	0.8772	0.8696	0.8621	0.8547	0.8475	0.8403	0.8333	0.8264	0.8197
2	0.9803	0.9612	0.9426	0.9246	0.9070	0.8900	0.8734	0.8573	0.8417	0.8264	0.8116	0.7972	0.7831	0.7695	0.7561	0.7432	0.7305	0.7182	0.7062	0.6944	0.6830	0.6719
3	0.9706	0.9423	0.9151	0.8890	0.8638	0.8396	0.8163	0.7938	0.7722	0.7513	0.7312	0.7118	0.6931	0.6750	0.6575	0.6407	0.6244	0.6086	0.5934	0.5787	0.5645	0.5507
4	0.9610	0.9238	0.8885	0.8548	0.8227	0.7921	0.7629	0.7350	0.7084	0.6830	0.6587	0.6355	0.6133	0.5921	0.5718	0.5523	0.5337	0.5158	0.4987	0.4823	0.4665	0.4514
5	0.9515	0.9057	0.8626	0.8219	0.7835	0.7473	0.7130	0.6806	0.6499	0.6209	0.5935	0.5674	0.5428	0.5194	0.4972	0.4761	0.4561	0.4371	0.4190	0.4019	0.3855	0.3700
6	0.9420	0.8880	0.8375	0.7903	0.7462	0.7050	0.6663	0.6302	0.5963	0.5645	0.5346	0.5066	0.4803	0.4556	0.4323	0.4104	0.3898	0.3704	0.3521	0.3349	0.3186	0.3033
7	0.9327	0.8706	0.8131	0.7599	0.7107	0.6651	0.6227	0.5835	0.5470	0.5132	0.4817	0.4523	0.4251	0.3996	0.3759	0.3538	0.3332	0.3139	0.2959	0.2791	0.2633	0.2486
8	0.9235	0.8535	0.7894	0.7307	0.6768	0.6274	0.5820	0.5403	0.5019	0.4665	0.4339	0.4039	0.3762	0.3506	0.3269	0.3050	0.2848	0.2660	0.2487	0.2326	0.2176	0.2038
9	0.9143	0.8368	0.7664	0.7026	0.6446	0.5919	0.5439	0.5002	0.4604	0.4241	0.3909	0.3606	0.3329	0.3075	0.2843	0.2630	0.2434	0.2255	0.2090	0.1938	0.1799	0.1670
10	0.9053	0.8203	0.7441	0.6756	0.6139	0.5584	0.5083	0.4632	0.4224	0.3855	0.3522	0.3220	0.2946	0.2697	0.2472	0.2267	0.2080	0.1911	0.1756	0.1615	0.1486	0.1369
11	0.8963	0.8043	0.7224	0.6496	0.5847	0.5268	0.4751	0.4289	0.3875	0.3505	0.3173	0.2875	0.2607	0.2366	0.2149	0.1954	0.1778	0.1619	0.1476	0.1346	0.1228	0.1122
12	0.8874	0.7885	0.7014	0.6246	0.5568	0.4970	0.4440	0.3971	0.3555	0.3186	0.2858	0.2567	0.2307	0.2076	0.1869	0.1685	0.1520	0.1372	0.1240	0.1122	0.1015	0.0920
13	0.8787	0.7730	0.6810	0.6006	0.5303	0.4688	0.4150	0.3677	0.3262	0.2897	0.2575	0.2292	0.2042	0.1821	0.1625	0.1452	0.1299	0.1163	0.1042	0.0935	0.0839	0.0754
14	0.8700	0.7579	0.6611	0.5775	0.5051	0.4423	0.3878	0.3405	0.2992	0.2633	0.2320	0.2046	0.1807	0.1597	0.1413	0.1252	0.1110	0.0985	0.0876	0.0779	0.0693	0.0618
15	0.8613	0.7430	0.6419	0.5553	0.4810	0.4173	0.3624	0.3152	0.2745	0.2394	0.2090	0.1827	0.1599	0.1401	0.1229	0.1079	0.0949	0.0835	0.0736	0.0649	0.0573	0.0507

Present value an **annuity** of R1 per period for n periods

Period	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	11%	12%	13%	14%	15%	16%	17%	18%	19%	20%	21%	22%
1	0.9901	0.9804	0.9709	0.9615	0.9524	0.9434	0.9346	0.9259	0.9174	0.9091	0.9009	0.8929	0.8850	0.8772	0.8696	0.8621	0.8547	0.8475	0.8403	0.8333	0.8264	0.8197
2	1.9704	1.9416	1.9135	1.8861	1.8594	1.8334	1.8080	1.7833	1.7591	1.7355	1.7125	1.6901	1.6681	1.6467	1.6257	1.6052	1.5852	1.5656	1.5465	1.5278	1.5095	1.4915
3	2.9410	2.8839	2.8286	2.7751	2.7232	2.6730	2.6243	2.5771	2.5313	2.4869	2.4437	2.4018	2.3612	2.3216	2.2832	2.2459	2.2096	2.1743	2.1399	2.1065	2.0739	2.0422
4	3.9020	3.8077	3.7171	3.6299	3.5460	3.4651	3.3872	3.3121	3.2397	3.1699	3.1024	3.0373	2.9745	2.9137	2.8550	2.7982	2.7432	2.6901	2.6386	2.5887	2.5404	2.4936
5	4.8534	4.7135	4.5797	4.4518	4.3295	4.2124	4.1002	3.9927	3.8897	3.7908	3.6959	3.6048	3.5172	3.4331	3.3522	3.2743	3.1993	3.1272	3.0576	2.9906	2.9260	2.8636
6	5.7955	5.6014	5.4172	5.2421	5.0757	4.9173	4.7665	4.6229	4.4859	4.3553	4.2305	4.1114	3.9975	3.8887	3.7845	3.6847	3.5892	3.4976	3.4098	3.3255	3.2446	3.1669
7	6.7282	6.4720	6.2303	6.0021	5.7864	5.5824	5.3893	5.2064	5.0330	4.8684	4.7122	4.5638	4.4226	4.2883	4.1604	4.0386	3.9224	3.8115	3.7057	3.6046	3.5079	3.4155
8	7.6517	7.3255	7.0197	6.7327	6.4632	6.2098	5.9713	5.7466	5.5348	5.3349	5.1461	4.9676	4.7988	4.6389	4.4873	4.3436	4.2072	4.0776	3.9544	3.8372	3.7256	3.6193
9	8.5660	8.1622	7.7861	7.4353	7.1078	6.8017	6.5152	6.2469	5.9952	5.7590	5.5370	5.3282	5.1317	4.9464	4.7716	4.6065	4.4506	4.3030	4.1633	4.0310	3.9054	3.7863
10	9.4713	8.9826	8.5302	8.1109	7.7217	7.3601	7.0236	6.7101	6.4177	6.1446	5.8892	5.6502	5.4262	5.2161	5.0188	4.8332	4.6586	4.4941	4.3389	4.1925	4.0541	3.9232
11	10.3676	9.7868	9.2526	8.7605	8.3064	7.8869	7.4987	7.1390	6.8052	6.4951	6.2065	5.9377	5.6869	5.4527	5.2337	5.0286	4.8364	4.6560	4.4865	4.3271	4.1769	4.0354
12	11.2551	10.5753	9.9540	9.3851	8.8633	8.3838	7.9427	7.5361	7.1607	6.8137	6.4924	6.1944	5.9176	5.6603	5.4206	5.1971	4.9884	4.7932	4.6105	4.4392	4.2784	4.1274
13	12.1337	11.3484	10.6350	9.9856	9.3936	8.8527	8.3577	7.9038	7.4869	7.1034	6.7499	6.4235	6.1218	5.8424	5.5831	5.3423	5.1183	4.9095	4.7147	4.5327	4.3624	4.2028
14	13.0037	12.1062	11.2961	10.5631	9.8986	9.2950	8.7455	8.2442	7.7862	7.3667	6.9819	6.6282	6.3025	6.0021	5.7245	5.4675	5.2293	5.0081	4.8023	4.6106	4.4317	4.2646
15	13.8651	12.8493	11.9379	11.1184	10.3797	9.7122	9.1079	8.5595	8.0607	7.6061	7.1909	6.8109	6.4624	6.1422	5.8474	5.5755	5.3242	5.0916	4.8759	4.6755	4.4890	4.3152

FUTURE VALUE TABLES

Future value of R1 due at the end of n periods

Period	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	11%	12%	13%	14%	15%	16%	17%	18%	19%	20%
1	1.0100	1.0200	1.0300	1.0400	1.0500	1.0600	1.0700	1.0800	1.0900	1.1000	1.1100	1.1200	1.1300	1.1400	1.1500	1.1600	1.1700	1.1800	1.1900	1.2000
2	1.0201	1.0404	1.0609	1.0816	1.1025	1.1236	1.1449	1.1664	1.1881	1.2100	1.2321	1.2544	1.2769	1.2996	1.3225	1.3456	1.3689	1.3924	1.4161	1.4400
3	1.0303	1.0612	1.0927	1.1249	1.1576	1.1910	1.2250	1.2597	1.2950	1.3310	1.3676	1.4049	1.4429	1.4815	1.5209	1.5609	1.6016	1.6430	1.6852	1.7280
4	1.0406	1.0824	1.1255	1.1699	1.2155	1.2625	1.3108	1.3605	1.4116	1.4641	1.5181	1.5735	1.6305	1.6890	1.7490	1.8106	1.8739	1.9388	2.0053	2.0736
5	1.0510	1.1041	1.1593	1.2167	1.2763	1.3382	1.4026	1.4693	1.5386	1.6105	1.6851	1.7623	1.8424	1.9254	2.0114	2.1003	2.1924	2.2878	2.3864	2.4883
6	1.0615	1.1262	1.1941	1.2653	1.3401	1.4185	1.5007	1.5869	1.6771	1.7716	1.8704	1.9738	2.0820	2.1950	2.3131	2.4364	2.5652	2.6996	2.8398	2.9860
7	1.0721	1.1487	1.2299	1.3159	1.4071	1.5036	1.6058	1.7138	1.8280	1.9487	2.0762	2.2107	2.3526	2.5023	2.6600	2.8262	3.0012	3.1855	3.3793	3.5832
8	1.0829	1.1717	1.2668	1.3686	1.4775	1.5938	1.7182	1.8509	1.9926	2.1436	2.3045	2.4760	2.6584	2.8526	3.0590	3.2784	3.5115	3.7589	4.0214	4.2998
9	1.0937	1.1951	1.3048	1.4233	1.5513	1.6895	1.8385	1.9990	2.1719	2.3579	2.5580	2.7731	3.0040	3.2519	3.5179	3.8030	4.1084	4.4355	4.7854	5.1598
10	1.1046	1.2190	1.3439	1.4802	1.6289	1.7908	1.9672	2.1589	2.3674	2.5937	2.8394	3.1058	3.3946	3.7072	4.0456	4.4114	4.8068	5.2338	5.6947	6.1917
11	1.1157	1.2434	1.3842	1.5395	1.7103	1.8983	2.1049	2.3316	2.5804	2.8531	3.1518	3.4785	3.8359	4.2262	4.6524	5.1173	5.6240	6.1759	6.7767	7.4301
12	1.1268	1.2682	1.4258	1.6010	1.7959	2.0122	2.2522	2.5182	2.8127	3.1384	3.4985	3.8960	4.3345	4.8179	5.3503	5.9360	6.5801	7.2876	8.0642	8.9161
13	1.1381	1.2936	1.4685	1.6651	1.8856	2.1329	2.4098	2.7196	3.0658	3.4523	3.8833	4.3635	4.8980	5.4924	6.1528	6.8858	7.6987	8.5994	9.5964	10.6993
14	1.1495	1.3195	1.5126	1.7317	1.9799	2.2609	2.5785	2.9372	3.3417	3.7975	4.3104	4.8871	5.5348	6.2613	7.0757	7.9875	9.0075	10.1472	11.4198	12.8392
15	1.1610	1.3459	1.5580	1.8009	2.0789	2.3966	2.7590	3.1722	3.6425	4.1772	4.7846	5.4736	6.2543	7.1379	8.1371	9.2655	10.5387	11.9737	13.5895	15.4070

Future value an annuity of R1 per period for n periods

Period	1%	2%	4%	5%	6%	7%	8%	9%	10%
1	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
2	2.0100	2.0200	2.0400	2.0500	2.0600	2.0700	2.0800	2.0900	2.1000
3	3.0300	3.0600	3.1220	3.1530	3.1840	3.2150	3.2460	3.2780	3.3100
4	4.0600	4.1220	4.2460	4.3100	4.3750	4.4400	4.5060	4.5730	4.6410
5	5.1010	5.2040	5.4160	5.5260	5.6370	5.7510	5.8670	5.9850	6.1050
6	6.1520	6.3080	6.6330	6.8020	6.9750	7.1530	7.3360	7.5230	7.7160
7	7.2140	7.4340	7.8980	8.1420	8.3940	8.6540	8.9230	9.2000	9.4870
8	8.2860	8.5830	9.2140	9.5490	9.8970	10.2600	10.6370	11.0280	11.4360
9	9.3690	9.7550	10.5830	11.0270	11.4910	11.9780	12.4880	13.0210	13.5790
10	10.4620	10.9500	12.0060	12.5780	13.1810	13.8160	14.4870	15.1930	15.9370
11	11.5670	12.1690	13.4860	14.2070	14.9720	15.7840	16.6450	17.5600	18.5310
12	12.6830	13.4120	15.0260	15.9170	16.8700	17.8880	18.9770	20.1410	21.3840
13	13.8090	14.6800	16.6270	17.7130	18.8820	20.1410	21.4950	22.9530	24.5230
14	14.9470	15.9740	18.2920	19.5990	21.0150	22.5500	24.2150	26.0190	27.9750
15	16.0970	17.2930	20.0240	21.5790	23.2760	25.1290	27.1520	29.3610	31.7720