ECO220Y1Y, Test #2, Prof. Murdock

June 19, 2023, 11:10am – 1:00pm

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Instructions:

- You have 110 minutes. Keep these test papers and the *Supplement* closed and face up on your desk until the start of the test is announced. You must stay for a minimum of 60 minutes.
- You may use a **non-programmable calculator**.
- There are 7 questions (most with multiple parts) with varying point values worth a total of 95 points.
- This test includes these 8 pages plus the *Supplement*. The *Supplement* contains the aid sheets and readings, figures, tables, and other materials for some test questions. For each question referencing the *Supplement*, carefully review *all* materials. ***The Supplement will NOT be collected:*** write your answers on these test papers. When we announce the end of the test, hand these test papers to us (you keep the *Supplement*).
- Write your answers clearly, completely, and concisely in the designated space provided immediately after each question. An answer guide ends each question to let you know what is expected. For example, a quantitative analysis, a fully labelled graph, and/or sentences. Any answer guide asking for a quantitative analysis *always* automatically means that you must show your work and make your reasoning clear.
    - Anything requested by the question and/or the answer guide is required. Similarly, limit yourself to the answer guide. For example, if the answer guide does not request sentences, provide only what is requested (e.g. quantitative analysis).
    - Marking TAs are instructed to accept all reasonable rounding.
- ***Your entire answer must fit in the designated space provided immediately after each question.*** No extra space/pages are possible. You *cannot* use blank space for other questions, nor can you write answers on the *Supplement*. ***Write in PENCIL and use an ERASER as needed*** so that you can fit your final answer (including work and reasoning) in the appropriate space. We give more blank space than is needed for each answer (with typical handwriting) worth full marks. ***Follow the answer guides and avoid excessively long answers.***

(1) See ***Supplement for Question (1)***: *Canada labour force status by educational achievement.*

(a) [6 pts] A member of which group is more likely to be unemployed: people with at most a high school degree or people with no degree? *Interpret.* Answer with a quantitative analysis using formal notation & 1 sentence.

(b) [3 pts] Suppose a person's labour force status were unrelated with their educational achievement but the fraction of people with each labour force status stayed the same and the fraction of people with each education level stayed the same. What number would replace 0.0036? Answer with a quantitative analysis using formal notation.

(2) See ***Supplement for Question (2)***: *Self-assessed willingness to take risks.*

(a) [3 pts] Among *all* ECO220Y students over the last decade, what percent have a self-assessed willingness to take risks above 6.4? Answer with a quantitative analysis.

(b) [3 pts] Among *all* ECO220Y students over the last decade, what is the value of the 10^{th} percentile of self-assessed willingness to take risks? Answer with a quantitative analysis.

(c) [7 pts] For LEC0301 in Summer 2023, is sampling error a *plausible* explanation for the sample mean being as high as it is? Answer with a quantitative analysis & 1 sentence.

(3) [6 pts] See ***Supplement for Question (3)***: *Creating a new variable.* What is the standard deviation of the new variable? Answer with a quantitative analysis.

(4) See ***Supplement for Question (4)***: *Educational attainment, age shares, and employment rates of Canadian women.*

(a) [6 pts] For a randomly selected ***employed woman***, what is the chance that she is 55 years or older? Answer with a quantitative analysis using formal notation.

(b) [6 pts] For a random sample of 120 Canadian women, what is the chance that two or more women in the sample are 25 to 54 years old and have eight or fewer years of education? Answer with a quantitative analysis.

(c) [12 pts] For a random sample of 512 Canadian women with above a bachelor's degree, is sampling error a *plausible* explanation if more than 80 percent are employed? Illustrate the answer with a fully labelled graph. Answer with a quantitative analysis, a fully labelled graph & 1 sentence.

(5) See ***Supplement for Question (5)***: *Fighting Climate Change: International Attitudes Toward Climate Policies.*

(a) [8 pts] In **Table 7**, for the category "limit driving" and for high-income countries, what is the 99% confidence interval? Next, and importantly, *interpret* the CI estimate. Answer with a quantitative analysis & 2 sentences.

(b) [4 pts] Among the twelve high-income countries in **Table 7**, only two (i.e. 17%) are within the 99% CI estimate from the previous part. Why so few? Answer with 2 sentences.

(6) See ***Supplement for Question (6)***: *Does Price Matter in Charitable Giving? Karlan and List (2007)*

(a) [8 pts] The 90% confidence interval estimate of the difference in the response rate between the low example amount group versus the control group is $LCL = 0.000530058$ and $UCL = 0.006146188$ (software gives these accurate to the ninth decimal place). *Interpret* the CI estimate, addressing causality. Answer with 2 – 3 sentences.

(b) [5 pts] Comparing those seeing a high example amount versus a low example amount, what is the 85% confidence interval estimate of the difference in the fraction choosing to donate? Answer with a quantitative analysis.

(c) [6 pts] Comparing **response rate** estimates across the eight columns, what is the **key message** of **Table 2B**? Answer with 2 – 3 sentences.

(7) See ***Supplement for Question (7)***: *2023 Ontario public disclosure of salaries.*

(a) [6 pts] Consider both **Summary #1** and **Summary #2**. Answer by filling in the blanks.

In formal notation, 124.9381 is _____, and 35.81888 is _____, and 119.9348 is _____, and 31.2389 is _____. Compared to the random sample with n = 30 in the *Supplement*, if we drew another random sample with n = 30, we expect the sample mean to _____ [be higher / be lower / stay the same], the sample standard deviation to _____ [be higher / be lower / stay the same], and the sample 75^{th} percentile to _____ [be higher / be lower / stay the same].

(b) [6 pts] Consider **Summary #3**. Answer by filling in the blanks.

For n = 30, the probability of getting a sample mean below $107,000 is about _____ [#] and the probability of getting a sample mean above $140,000 is somewhere between _____ [#] and _____ [#].

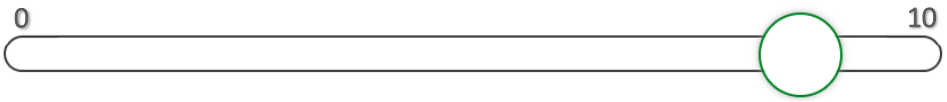
Next, **if n = 10 instead of n = 30**, then we expect the value in the spot 117.303 to _____ [increase / decrease / barely change], the value in the spot 187.3988 to _____ [increase / decrease / barely change], the value in the spot 42.74376 to _____ [increase / decrease / barely change], and the value in the spot 124.9463 to _____ [increase / decrease / barely change].

Supplement for Question (1): Consider the joint probability table below, retrieved from the Statistics Canada website.

Canada, 2022, Both Sexes, Aged 25 to 54 Years				
	Labour Force Status			
Highest level of educational achievement	Employed	Unemployed	Not in labor force	Total
No degree, certificate, or diploma	0.0371	0.0036	0.0172	0.0579
High school graduate	0.1204	0.0075	0.0265	0.1544
High school graduate, some post-secondary	0.0272	0.0017	0.0053	0.0341
Postsecondary certificate or diploma	0.3099	0.0124	0.0326	0.3549
University degree	0.3527	0.0132	0.0327	0.3986
Total	0.8473	0.0384	0.1143	1

Supplement for Question (2): Recall the survey question: "How do you see yourself: Are you a person who is generally willing to take risks, or do you try to avoid taking risks? Please choose a value on the scale below, where the value 0 means 'completely unwilling' and the value 10 means 'completely willing'."

Suppose that ***all* ECO220Y students over the last decade** answered this question but with a slider from 0 to 10 as illustrated below, which means they were *not* limited to integers. Suppose that the responses for this large population are Normally distributed with a mean of 5.2 and a standard deviation of 1.6.



On May 24, 2023, a ***sample* of ECO220Y students in LEC0301 in Summer 2023** answered with a 0 to 10 integer scale: see the tabulation below.

risk	Freq.	Percent	Cum.
0	7	11.67	11.67
2	2	3.33	15.00
3	5	8.33	23.33
4	4	6.67	30.00
5	8	13.33	43.33
6	10	16.67	60.00
7	14	23.33	83.33
8	6	10.00	93.33
9	2	3.33	96.67
10	2	3.33	100.00
Total	60	100.00	

Supplement for Question (3): For 169 students in ECO220Y in Summer 2023 who answered both the risk question and the competitiveness question, the standard deviation of the risk question (on a zero to 10 scale) is 2.1073. The standard deviation of the competitiveness question (on a zero to 10 scale) is 2.2093. The correlation between these two variables is 0.5137. A **new variable** averages the reply to the risk question and the reply to the competitiveness question for each student. (For example, for a student who said 8 and 7, value of the new variable is 7.5.)

Supplement for Question (4): The most recent release (January 2023) from Stats Canada describes the population shares and the employment rates in 2022 by educational attainment and age for women.

Table 14-10-0020-01. Educational attainment and age shares of women aged 15 years and up, Canada, 2022 and Employment rate by educational attainment and age

	Age (share)				Employment rate			
	Total, 15 yrs. and up	15 to 24 yrs.	25 to 54 yrs.	55 yrs. and up	Total, 15 yrs. and up	15 to 24 yrs.	25 to 54 yrs.	55 yrs. and up
Highest educational attainment (share)								
Total, all education levels	1.000	0.135	0.470	0.395	0.583	0.602	0.814	0.303
0 to 8 years	0.038	0.004	0.005	0.030	0.141	0.301	0.390	0.079
Some high school	0.093	0.038	0.015	0.040	0.319	0.401	0.545	0.159
High school graduate	0.187	0.032	0.062	0.093	0.481	0.649	0.704	0.274
Some postsecondary	0.052	0.024	0.015	0.012	0.578	0.628	0.733	0.295
Postsecondary certificate or diploma	0.323	0.022	0.165	0.135	0.631	0.788	0.840	0.351
Bachelor's degree	0.212	0.013	0.140	0.059	0.717	0.759	0.852	0.386
Above bachelor's degree	0.096	0.002	0.069	0.026	0.760	0.723	0.877	0.446

Supplement for Question (5): Consider an *NBER Working Paper* (2022) "Fighting Climate Change: International Attitudes Toward Climate Policies." It uses an international survey run between March 2021 and March 2022.

Table 7. Share of people willing to adopt climate-friendly behaviors

	High-income	Australia	Canada	Denmark	France	Germany	Italy	Japan	Poland	South Korea	Spain	United Kingdom	United States		**Middle-income**	Brazil	China	India	Indonesia	Mexico	South Africa	Turkey	Ukraine
Have a fuel-efficient or electric vehicle	54	45	52	60	45	45	78	48	53	57	60	51	50		69	78	65	74	67	70	60	73	62
Limit flying	51	37	53	49	56	64	64	37	58	43	62	46	39		55	52	59	66	56	59	48	44	49
Limit beef/meat consumption	40	31	38	33	38	45	62	24	49	36	44	44	36		44	44	48	62	49	40	33	35	35
Limit driving	37	26	35	33	32	41	57	37	41	36	47	37	29		49	41	62	66	54	47	38	46	25
Limit heating or cooling your home	34	25	27	33	39	36	55	26	37	29	46	30	28		48	46	56	68	60	59	39	34	9
Sample size (number of people responding to the survey)	24,599	1,978	2,022	2,013	2,006	2,006	2,088	1,990	2,053	1,932	2,268	2,025	2,218		16,081	1,860	1,717	2,472	2,488	2,045	1,932	2,003	1,564

Notes: For "To what extent would you be willing to adopt the following behaviors" respondents answer on a 5-point scale: "Not at all," "A little," "Moderately," "A lot," and "A great deal." The table reports the percent answering either "A lot" or "A great deal" for each climate-friendly behavior listed above.

Supplement for Question (6): Recall Karlan and List (2007) "Does Price Matter in Charitable Giving? Evidence from a Large-Scale Natural Field Experiment."

- For letters asking for a donation mailed to 50,083 people, they randomly vary some aspects of the letter.
- The control group – a random subset of the people – receive an ordinary letter that does not mention a match.
- For the treatment group (everyone not in the control group), the letter includes a match.
- The "match threshold" is the stated total amount of money available to match received donations: it takes values of $25,000, $50,000, $100,000 or is left unstated (implying that there may be no limit to the amount available to match donations).
- The "example amount" – a specific dollar amount used to explain how the match works – is either the person's previous highest donation amount ("low"), 25% more than that ("medium"), or 50% more than that ("high").
- Various subsets of the treatment group receive these different letters at random.

Below is an excerpt from Table 2B, except that the estimates are reported accurate to the fifth decimal place. (This is poor table design and is not what the author's did: they rounded to the nearest third decimal place. However, this gives you more accurate numbers to work with.)

Table 2B – Mean Responses
(Mean and standard errors)

		Match						
		Threshold				Example amount		
	Control	$25,000	$50,000	$100,000	Unstated	Low	Medium	High
Implied price of $1 of public good:	1.00	0.36	0.36	0.36	0.36	0.36	0.36	0.36
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Response rate	0.01786	0.02156	0.02241	0.02204	0.02215	0.02120	0.02219	0.02273
	(0.00103)	(0.00159)	(0.00162)	(0.00161)	(0.00161)	(0.00137)	(0.00140)	(0.00141)
Dollars given, unconditional	0.81327	1.06000	0.88904	0.90347	1.01493	0.91371	1.00368	0.98324
	(0.06330)	(0.10882)	(0.09128)	(0.08352)	(0.10648)	(0.07993)	(0.09057)	(0.08402)
Dollars given, conditional on giving	45.54027	49.17222	39.67380	41.00000	45.81460	43.10678	45.23887	43.25099
	(2.39707)	(3.52238)	(2.89969)	(2.33647)	(3.47450)	(2.55742)	(2.93179)	(2.54156)
Observations	16,687	8,350	8,345	8,350	8,351	11,134	11,133	11,129

Supplement for Question (7): Recall the 2023 Ontario public disclosure data with *all* public sector employees earning $100,000 CAN or more in the 2022 calendar year. The variable named salary is in $1,000s of Canadian dollars. Below are three different summaries produced by Stata.

Summary #1: This summarizes all employees in the 2023 disclosure.

```
                          salary
-------------------------------------------------------------
      Percentiles      Smallest
 1%     100.2922            100
 5%     101.3975            100
10%     102.0332            100       Obs             266,903
25%     103.5281            100       Sum of Wgt.     266,903

50%     112.4374                      Mean           124.9381
                        Largest       Std. Dev.      35.81888
75%      131.799        856.5519
90%     162.5692        968.7103      Variance       1282.992
95%     190.2173            1690      Skewness       4.493073
99%     266.9359            1730      Kurtosis       59.31905
```

Summary #2: This summarizes a random sample of 30 employees.

```
                          salary
-------------------------------------------------------------
      Percentiles      Smallest
 1%     100.6484        100.6484
 5%     101.4398        101.4398
10%      101.523         101.497      Obs                 30
25%     101.8269         101.549      Sum of Wgt.         30

50%     103.3656                      Mean           119.9348
                        Largest       Std. Dev.       31.2389
75%     119.2247        163.9943
90%     164.3571        164.7199      Variance       975.8688
95%     189.4578        189.4578      Skewness       2.202837
99%     233.6431        233.6431      Kurtosis       7.516149
```

Summary #3: This summarizes the results of a simulation to obtain the simulated sampling distribution of the sample mean for a sample size of 30 ($n = 30$) using 200,000 simulation draws ($m = 200{,}000$).

```
                        sample mean
-------------------------------------------------------------
      Percentiles      Smallest
 1%     112.9676        106.1555
 5%     115.6573        106.4117
10%      117.303        106.4634      Obs             200,000
25%     120.3363        107.2116      Sum of Wgt.     200,000

50%     124.2093                      Mean           124.9463
                        Largest       Std. Dev.      6.537871
75%     128.7583        187.3988
90%     133.4708        188.9387      Variance       42.74376
95%     136.6278        190.3812      Skewness         .83021
99%     143.5549        205.1489      Kurtosis       5.001855
```

Sample mean: $\bar{X} = \frac{\sum_{i=1}^{n} x_i}{n}$ **Sample variance:** $s^2 = \frac{\sum_{i=1}^{n}(x_i - \bar{X})^2}{n-1} = \frac{\sum_{i=1}^{n} x_i^2}{n-1} - \frac{\left(\sum_{i=1}^{n} x_i\right)^2}{n(n-1)}$ **Sample s.d.:** $s = \sqrt{s^2}$

Sample coefficient of variation: $CV = \frac{s}{\bar{X}}$ **Sample covariance:** $s_{xy} = \frac{\sum_{i=1}^{n}(x_i - \bar{X})(y_i - \bar{Y})}{n-1} = \frac{\sum_{i=1}^{n} x_i y_i}{n-1} - \frac{(\sum_{i=1}^{n} x_i)(\sum_{i=1}^{n} y_i)}{n(n-1)}$

Sample interquartile range: $IQR = Q3 - Q1$ **Sample coefficient of correlation:** $r = \frac{s_{xy}}{s_x s_y} = \frac{\sum_{i=1}^{n} z_{x_i} z_{y_i}}{n-1}$

Addition rule: $P(A\ or\ B) = P(A) + P(B) - P(A\ and\ B)$ **Conditional probability:** $P(A|B) = \frac{P(A\ and\ B)}{P(B)}$

Complement rules: $P(A^C) = P(A') = 1 - P(A)$ $P(A^C|B) = P(A'|B) = 1 - P(A|B)$

Multiplication rule: $P(A\ and\ B) = P(A|B)P(B) = P(B|A)P(A)$

Expected value: $E[X] = \mu = \sum_{all\ x} xp(x)$ **Variance:** $V[X] = E[(X-\mu)^2] = \sigma^2 = \sum_{all\ x}(x-\mu)^2 p(x)$

Covariance: $COV[X,Y] = E[(X-\mu_X)(Y-\mu_Y)] = \sigma_{XY} = \sum_{all\ x}\sum_{all\ y}(x-\mu_X)(y-\mu_Y)p(x,y)$

Laws of expected value:

$E[c] = c$

$E[X + c] = E[X] + c$

$E[cX] = cE[X]$

$E[a + bX + cY] = a + bE[X] + cE[Y]$

Laws of variance:

$V[c] = 0$

$V[X + c] = V[X]$

$V[cX] = c^2 V[X]$

$V[a + bX + cY] = b^2 V[X] + c^2 V[Y] + 2bc * COV[X,Y]$

$V[a + bX + cY] = b^2 V[X] + c^2 V[Y] + 2bc * SD(X) * SD(Y) * \rho$

where $\rho = CORRELATION[X,Y]$

Laws of covariance:

$COV[X,c] = 0$

$COV[a + bX, c + dY] = bd * COV[X,Y]$

Combinatorial formula: $C_x^n = \frac{n!}{x!(n-x)!}$ **Binomial probability:** $p(x) = \frac{n!}{x!(n-x)!} p^x (1-p)^{n-x}$ for $x = 0,1,2,\ldots,n$

If *X* is Binomial $(X \sim B(n,p))$ **then** $E[X] = np$ **and** $V[X] = np(1-p)$

If *X* is Uniform $(X \sim U[a,b])$ **then** $f(x) = \frac{1}{b-a}$ **and** $E[X] = \frac{a+b}{2}$ **and** $V[X] = \frac{(b-a)^2}{12}$

Sampling distribution of $\bar{X}$:

$\mu_{\bar{X}} = E[\bar{X}] = \mu$

$\sigma_{\bar{X}}^2 = V[\bar{X}] = \frac{\sigma^2}{n}$

$\sigma_{\bar{X}} = SD[\bar{X}] = \frac{\sigma}{\sqrt{n}}$

Sampling distribution of $\hat{P}$:

$\mu_{\hat{P}} = E[\hat{P}] = p$

$\sigma_{\hat{P}}^2 = V[\hat{P}] = \frac{p(1-p)}{n}$

$\sigma_{\hat{P}} = SD[\hat{P}] = \sqrt{\frac{p(1-p)}{n}}$

Sampling distribution of $(\hat{P}_2 - \hat{P}_1)$:

$\mu_{\hat{P}_2 - \hat{P}_1} = E[\hat{P}_2 - \hat{P}_1] = p_2 - p_1$

$\sigma_{\hat{P}_2 - \hat{P}_1}^2 = V[\hat{P}_2 - \hat{P}_1] = \frac{p_2(1-p_2)}{n_2} + \frac{p_1(1-p_1)}{n_1}$

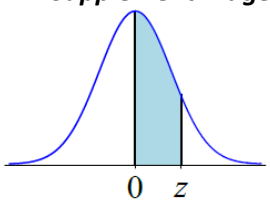
$\sigma_{\hat{P}_2 - \hat{P}_1} = SD[\hat{P}_2 - \hat{P}_1] = \sqrt{\frac{p_2(1-p_2)}{n_2} + \frac{p_1(1-p_1)}{n_1}}$

Inference about a population proportion:

CI estimator: $\hat{P} \pm z_{\alpha/2}\sqrt{\frac{\hat{P}(1-\hat{P})}{n}}$

Inference about comparing two population proportions:

CI estimator: $(\hat{P}_2 - \hat{P}_1) \pm z_{\alpha/2}\sqrt{\frac{\hat{P}_2(1-\hat{P}_2)}{n_2} + \frac{\hat{P}_1(1-\hat{P}_1)}{n_1}}$



The Standard Normal Distribution:

	Second decimal place in z									
z	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	0.0000	0.0040	0.0080	0.0120	0.0160	0.0199	0.0239	0.0279	0.0319	0.0359
0.1	0.0398	0.0438	0.0478	0.0517	0.0557	0.0596	0.0636	0.0675	0.0714	0.0753
0.2	0.0793	0.0832	0.0871	0.0910	0.0948	0.0987	0.1026	0.1064	0.1103	0.1141
0.3	0.1179	0.1217	0.1255	0.1293	0.1331	0.1368	0.1406	0.1443	0.1480	0.1517
0.4	0.1554	0.1591	0.1628	0.1664	0.1700	0.1736	0.1772	0.1808	0.1844	0.1879
0.5	0.1915	0.1950	0.1985	0.2019	0.2054	0.2088	0.2123	0.2157	0.2190	0.2224
0.6	0.2257	0.2291	0.2324	0.2357	0.2389	0.2422	0.2454	0.2486	0.2517	0.2549
0.7	0.2580	0.2611	0.2642	0.2673	0.2704	0.2734	0.2764	0.2794	0.2823	0.2852
0.8	0.2881	0.2910	0.2939	0.2967	0.2995	0.3023	0.3051	0.3078	0.3106	0.3133
0.9	0.3159	0.3186	0.3212	0.3238	0.3264	0.3289	0.3315	0.3340	0.3365	0.3389
1.0	0.3413	0.3438	0.3461	0.3485	0.3508	0.3531	0.3554	0.3577	0.3599	0.3621
1.1	0.3643	0.3665	0.3686	0.3708	0.3729	0.3749	0.3770	0.3790	0.3810	0.3830
1.2	0.3849	0.3869	0.3888	0.3907	0.3925	0.3944	0.3962	0.3980	0.3997	0.4015
1.3	0.4032	0.4049	0.4066	0.4082	0.4099	0.4115	0.4131	0.4147	0.4162	0.4177
1.4	0.4192	0.4207	0.4222	0.4236	0.4251	0.4265	0.4279	0.4292	0.4306	0.4319
1.5	0.4332	0.4345	0.4357	0.4370	0.4382	0.4394	0.4406	0.4418	0.4429	0.4441
1.6	0.4452	0.4463	0.4474	0.4484	0.4495	0.4505	0.4515	0.4525	0.4535	0.4545
1.7	0.4554	0.4564	0.4573	0.4582	0.4591	0.4599	0.4608	0.4616	0.4625	0.4633
1.8	0.4641	0.4649	0.4656	0.4664	0.4671	0.4678	0.4686	0.4693	0.4699	0.4706
1.9	0.4713	0.4719	0.4726	0.4732	0.4738	0.4744	0.4750	0.4756	0.4761	0.4767
2.0	0.4772	0.4778	0.4783	0.4788	0.4793	0.4798	0.4803	0.4808	0.4812	0.4817
2.1	0.4821	0.4826	0.4830	0.4834	0.4838	0.4842	0.4846	0.4850	0.4854	0.4857
2.2	0.4861	0.4864	0.4868	0.4871	0.4875	0.4878	0.4881	0.4884	0.4887	0.4890
2.3	0.4893	0.4896	0.4898	0.4901	0.4904	0.4906	0.4909	0.4911	0.4913	0.4916
2.4	0.4918	0.4920	0.4922	0.4925	0.4927	0.4929	0.4931	0.4932	0.4934	0.4936
2.5	0.4938	0.4940	0.4941	0.4943	0.4945	0.4946	0.4948	0.4949	0.4951	0.4952
2.6	0.4953	0.4955	0.4956	0.4957	0.4959	0.4960	0.4961	0.4962	0.4963	0.4964
2.7	0.4965	0.4966	0.4967	0.4968	0.4969	0.4970	0.4971	0.4972	0.4973	0.4974
2.8	0.4974	0.4975	0.4976	0.4977	0.4977	0.4978	0.4979	0.4979	0.4980	0.4981
2.9	0.4981	0.4982	0.4982	0.4983	0.4984	0.4984	0.4985	0.4985	0.4986	0.4986
3.0	0.4987	0.4987	0.4987	0.4988	0.4988	0.4989	0.4989	0.4989	0.4990	0.4990
3.1	0.4990	0.4991	0.4991	0.4991	0.4992	0.4992	0.4992	0.4992	0.4993	0.4993
3.2	0.4993	0.4993	0.4994	0.4994	0.4994	0.4994	0.4994	0.4995	0.4995	0.4995
3.3	0.4995	0.4995	0.4995	0.4996	0.4996	0.4996	0.4996	0.4996	0.4996	0.4997
3.4	0.4997	0.4997	0.4997	0.4997	0.4997	0.4997	0.4997	0.4997	0.4997	0.4998
3.5	0.4998	0.4998	0.4998	0.4998	0.4998	0.4998	0.4998	0.4998	0.4998	0.4998
3.6	0.4998	0.4998	0.4999	0.4999	0.4999	0.4999	0.4999	0.4999	0.4999	0.4999