

Question

1 2 3 4 5 6 7 8 9

Description

Section 4.4 - The Normal Distribution

Instructions

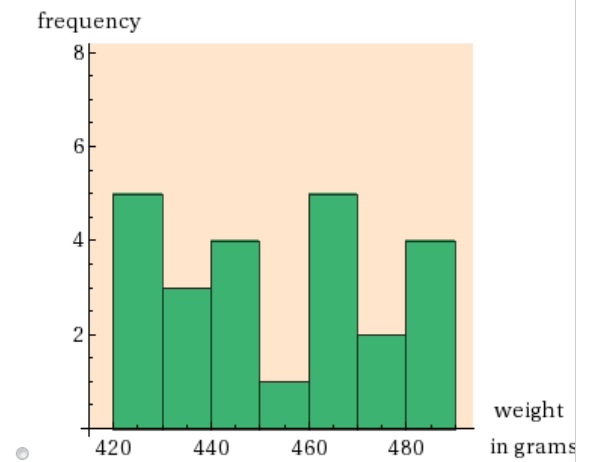
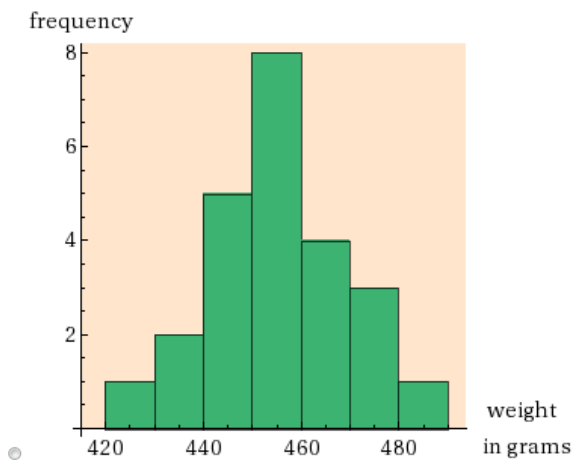
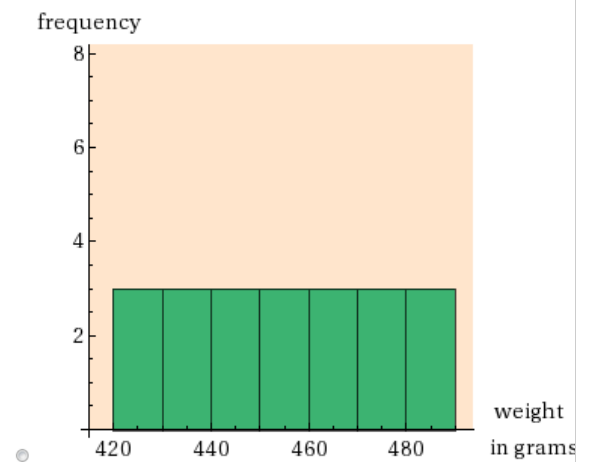
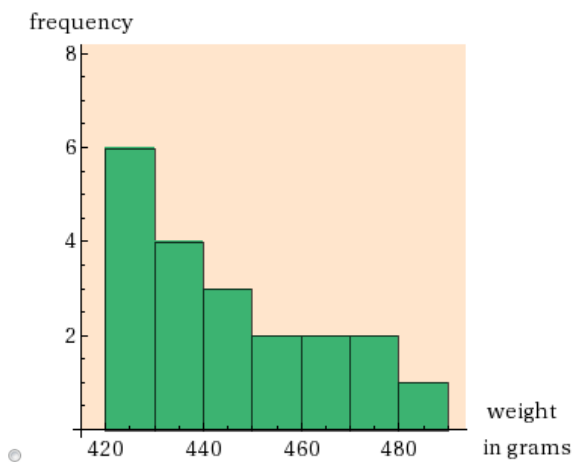
Please work all homework questions and clearly label / place your answers in the boxes (or parenthesis) provided. If you have questions, please feel free to email me at Joshua.Patterson@tamuc.edu

1. Question Details

JMod7 4.4.002. [1639274]

The weights (in grams) of several bags of chocolate chip cookies are given in the following table. Construct a histogram for the data using the groups $420 \leq x < 430$, $430 \leq x < 440$, . . . , $480 \leq x < 490$.

451	435	482	449	454	451
479	448	432	423	461	475
467	453	448	459	454	444
475	461	450	466	446	458



Do the data appear to be approximately normally distributed? Explain.

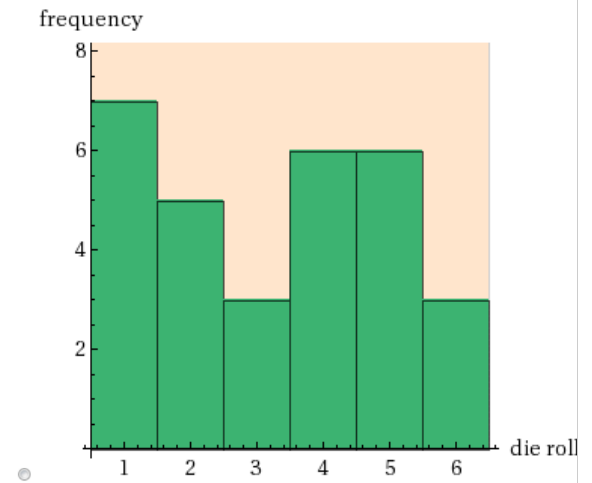
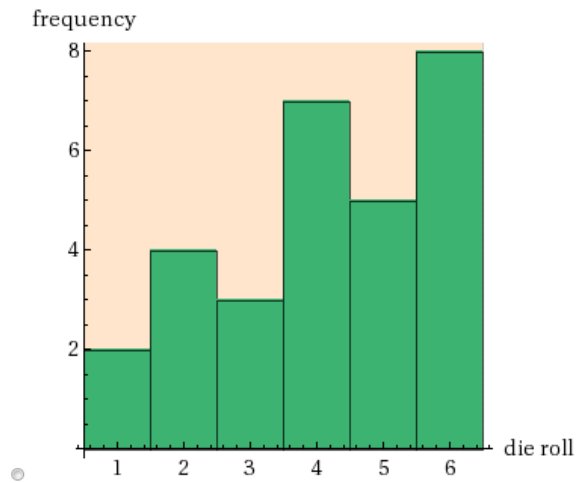
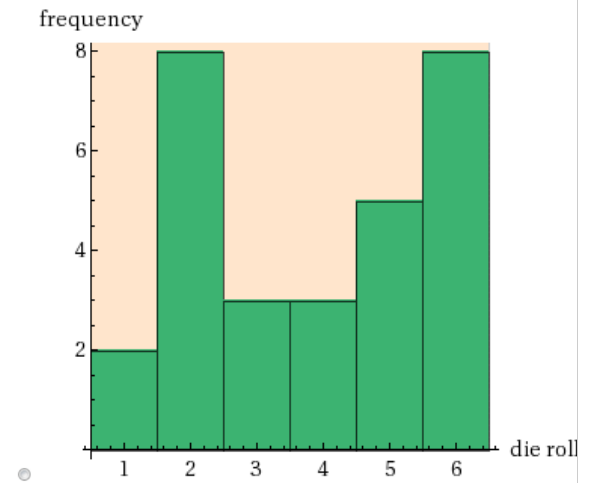
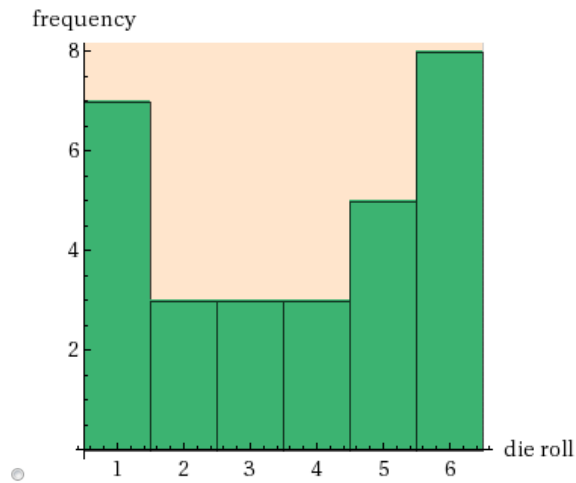
- Yes, the histogram is relatively uniform.
- No, the histogram is left tailed.
- No, the histogram is right tailed.
- No, the data looks random.
- Yes, the histogram looks like a bell curve.

2. Question Details

JModd7 4.4.004. [1639297]

A die was rolled several times, and the results are given in the following table. Construct a histogram for the data using the single-values 1, 2, 3, 4, 5, and 6.

5	3	1	1	4	2
6	4	1	2	5	5
4	3	1	6	4	2
3	1	2	5	2	1
4	6	5	1	4	5



Do the data appear to be normally distributed? Explain.

- Yes, the histogram is left-tailed.
- Yes, the histogram looks like a bell curve.
- No, the histogram is left-tailed.
- Yes, the histogram is relatively uniform.
- No, the histogram is relatively uniform.

3. Question Details

JModd7 4.4.005. [1639392]

What percent of the standard normal z -distribution lies between the following values? (Round your answers to two decimal places.)

(a) $z = 0$ and $z = 1$

%

(b) $z = -1$ and $z = 0$

%

(c) $z = -1$ and $z = 1$ (Note: This interval represents one standard deviation of the mean.)

%

4. Question Details

JModd7 4.4.006. [1639462]

What percent of the standard normal z -distribution lies between the following values? (Round your answers to two decimal places.)

(a) $z = 0$ and $z = 2$

%

(b) $z = -2$ and $z = 0$

%

(c) $z = -2$ and $z = 2$ (Note: This interval represents two standard deviations of the mean.)

%

5. Question Details

JModd7 4.4.010. [1639501]

A population is normally distributed with mean **18.7** and standard deviation **1.1**.

(a) Find the intervals representing one, two, and three standard deviations of the mean.

one standard deviation (smaller value)

(larger value)

two standard deviations (smaller value)

(larger value)

three standard deviations (smaller value)

(larger value)

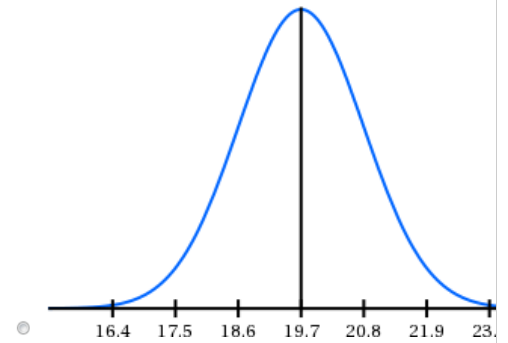
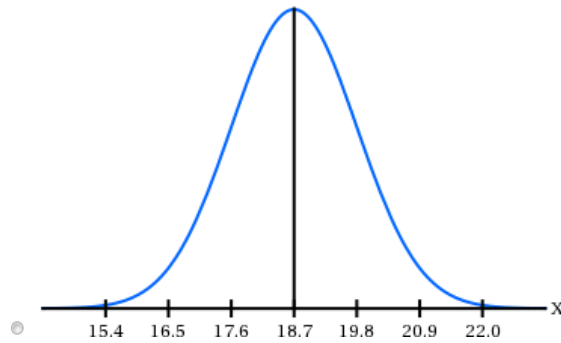
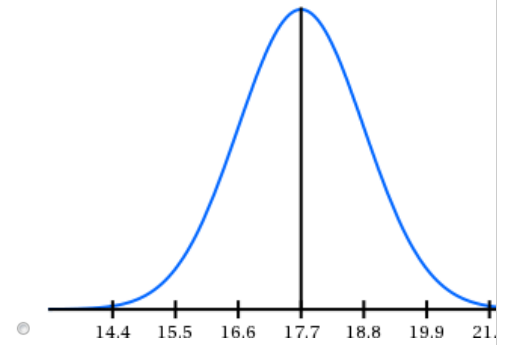
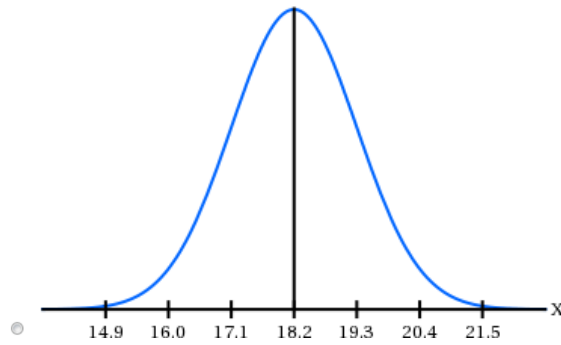
(b) What percent of the data lies in each of the intervals in part (a)? (Round your answers to two decimal places.)

one standard deviation %

two standard deviations %

three standard deviations %

(c) Draw a sketch of the bell curve.



6. Question Details

JMod7 4.4.011. [1639395]

Find the following probabilities. (Round your answers to four decimal places.)

(a) $p(0 < z < 1.62)$

(b) $p(1.30 < z < 1.84)$

(c) $p(-0.36 < z < 1.57)$

(d) $p(z < -1.92)$

(e) $p(-1.33 < z < -0.86)$

(f) $p(z < 1.27)$

7. Question Details

JMod7 4.4.013. [1639518]

Find c such that each of the following is true. (Round your answers to two decimal places.)

(a) $p(0 < z < c) = 0.1323$
 $c =$

(b) $p(c < z < 0) = 0.4836$
 $c =$

(c) $p(-c < z < c) = 0.4616$
 $c =$

(d) $p(z > c) = 0.6070$

$c =$

(e) $p(z > c) = 0.0504$

$c =$

(f) $p(z < c) = 0.1046$

$c =$

8. Question Details

JModd7 4.4.016. [1639677]

A population X is normally distributed with mean 74.5 and standard deviation 9.5 . For each of the following values of x , find the corresponding z -number. Round off your answers to two decimal places.

(a) $x = 90$

(b) $x = 80$

(c) $x = 75$

(d) $x = 70$

(e) $x = 60$

(f) $x = 50$

9. Question Details

JModd7 4.4.028. [1639579]

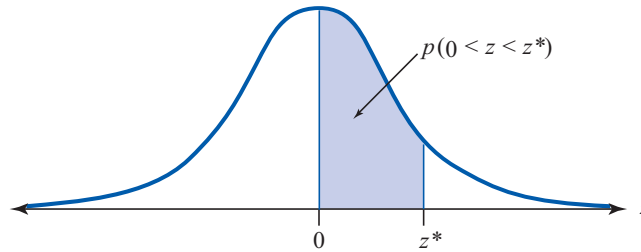
The time it takes an employee to package the components of a certain product is normally distributed with $\mu = 8.5$ and $\sigma = 2.5$ minutes. As an incentive, management has decided to give a bonus to the 20% of employees who took the shortest amount of time to package the components. Find the amount of time taken to package the components that will indicate that an employee should get a bonus. (Round your answer to two decimal places.)

An employee must package components in a time ---Select--- minutes.

Assignment Details

APPENDIX F

Body Table for the Standard Normal Distribution



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	0.4692	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