girls from Winnetka, 7 girls from Wilmette, 4 boys from Glencoe, 2 boys from Winnetka and 9 girls from Glenoce. If the teacher calls upon a student to answer a question, what is the probability that the student will be a boy?

A) 0.385
B) 0.436
C) 0.8
D) 0.282

11+4+2 = 17 boys
6+7+9 = 22 girls
total 39 students

17/39 = .436

front 2

The diameters of bolts produced by a certain machine are normally distributed with a mean of 0.30 inches and a standard deviation of 0.01 inches.What percentage of bolts will have a diameter greater than 0.32 inches?

A) 2.28%
B) 37.45%
C) 97.72%
D) 47.72%

back 2

A) 2.28%

(.32-.3)/.01 =

normalcdf
lower 2

front 3

A sample of 100 wood and 100 graphite tennis rackets are taken from the warehouse. If 9 wood and 14 graphite are defective and one racket is randomly selected from the sample, find the probability that the racket is wood or defective.

A) 0.545
B) 0.115
C) 0.57
D) There is insufficient information to answer the question.

back 3

C) 0.57

total 100w+100g=200
defective 9w+14g= 23

100/200 + 14/200 = 114/200

front 4

In one town, 61% of adults have health insurance.What is the probability that 6 adults selected at random from the town all have health insurance

A) 0.098
B) 0.61
C) 3.66
D) 0.052

back 4

D) 0.052

$.61^6$

A cereal company claims that the mean weight of the cereal in its packets is 14 oz. Identify the type I error for the test.

A) Reject the claim that the mean weight is 14 oz when it is actually greater than 14 oz.
B) Reject the claim that the mean weight is 14 oz when it is actually 14 oz.
C) Reject the claim that the mean weight is different from 14 oz when it is actually 14 oz.
D) Fail to reject the claim that the mean weight is 14 oz when it is actually different from 14 oz.

B) Reject the claim that the mean weight is 14 oz when it is actually 14 oz.

---

front 6

back 6

Use the given data to find the equation of the regression line.

Performance	59	63	65	69	58	77	76	69	70	64
Attitude	72	67	78	82	75	87	92	83	87	78

A)y^= -47.3 + 2.02x
B)y^= 11.7 + 1.02x
C)y^= 2.81 + 1.35x
D)y^= 92.3 - 0.669x

B)y^= 11.7 + 1.02x

L1 & L2
stat / calc / LinReg (#8)

---

front 7

back 7

The probability that z lies between -1.10 and -0.36

A) 0.4951
B) 0.2239
C) -0.2237
D) 0.2237

D) 0.2237

normalcdf
lower -1.10
upper -0.36

.22375?

---

front 8

back 8

According to a college survey, 22% of all students work full time. Find the mean for the number of students who work full time in samples of size 16.

A) 2.8
B) 4.0
C) 3.5
D) 0.2

C) 3.5

16*.22

regular tests count for 40% of the final grade, the final exam counts for 30%, the project counts for 10%, and homework counts for 20%.What is her weighted mean grade? Round to one decimal place.

A) 84.2
B) 84.1
C) 83.4
D) 82.4

C) 83.4

(((91+76+92+79)/4)*.4) + (79*.3)+ (85*.1)+ (87*.2)

front 10

The annual precipitation amounts in a certain mountain range are normally distributed with a mean of 95 inches, and a standard deviation of 16 inches.What is the probability that the mean annual precipitation during 64 randomly picked years will be less than 97.8 inches?

A) 0.0808
B) 0.4192
C) 0.9192
D) 0.5808

back 10

C) 0.9192

use new standard dev = 16/sqrt(64) = 2
(97.8 - 95)/2 = 1.4

normalcdf
upper 1.4

front 11

The probabilities that a batch of 4 computers will contain 0, 1, 2, 3, and 4 defective computers are 0.4979, 0.3793, 0.1084, 0.0138, and 0.0007, respectively. Find the standard deviation for the probability distribution.

A) σ = 0.54
B) σ = 0.73
C) σ = 0.68
D) σ = 0.97

back 11

B) σ = 0.73

Use Stats L1 & L2

front 12

Height (inches)	Frequency
69.0 – 71.9	21
72.0 – 74.9	20
75.0 – 77.9	14
78.0 – 80.9	19
81.0 – 83.9	6

A)

Height (inches)	Cumulative Frequency
69.0 – 71.9	21
72.0 – 74.9	41
75.0 – 77.9	55
78.0 – 80.9	74
81.0 – 83.9	80

B)

Height (inches)	Cumulative Frequency
Less than 72.0	41
Less than 75.0	55
Less than 78.0	74
Less than 81.0	80
Less than 84.0	86

C)

Height (inches)	Cumulative Frequency
Less than 72.0	21
Less than 75.0	41
Less than 78.0	55
Less than 81.0	74
Less than 84.0	80

D)

Height (inches)	Cumulative Frequency
Less than 72.0	0.263
Less than 75.0	0.250
Less than 78.0	0.175
Less than 81.0	0.237
Less than 84.0	0.075

Construct the cumulative frequency distribution that corresponds to the given frequency distribution.

back 12

C)

Height (inches)	Cumulative Frequency
Less than 72.0	21
Less than 75.0	41
Less than 78.0	55
Less than 81.0	74
Less than 84.0	80

A health and fitness club surveys 40 randomly selected members and found that the average weight of those questioned is 157 lb.

A) Statistic
B) Parameter

A) Statistic

front 14

How many women must be randomly selected to estimate the mean weight of women in one age group.We want 90% confidence that the sample mean is within 2.7 lb of the population mean, and the population standard deviation is known to be 22 lb.

A) 180
B) 256
C) 178
D) 181

back 14

A) 180

Za/2 = (1-.9)/2 = .05 invNorm = 1.645

$((Za2*standev)/E)^2 = ((1.645*22)/2.7)^2$

front 15

Human body temperatures are normally distributed with a mean of 98.20°F and a standard deviation of 0.62°F. Find the temperature that separates the top 7% from the bottom 93%. Round to the nearest hundredth of a degree.

A) 99.12°F
B) 97.28°F
C) 98.78°F
D) 98.40°F

back 15

A) 99.12°F

invNorm .93 = 1.476

1.476 * .62 + 98.2

front 16

Six pairs of data yield r = 0.444 and the regression equation y^ = 5x + 2. Also, y- = 18.3. What is the best predicted value of y for x = 5?

A) 27
B) 93.5
C) 18.3
D) 4.22

back 16

C) 18.3

in 8600); $1700 (1 chance in 5400); $700 (1 chance in 4600); $200 (1 chance in 2600). Find the expected value of the amount won for one entry if the cost of entering is 55 cents.

A) $200
B) $0.91
C) $0.47
D) $0.44

L1 = prize money & cost
L2 = corrosonding probability (prob of 1 for cost

stat / calc / Run 1-var stats
answer is sigmaX (second line)

---

front 18

Find the standard deviation for the given sample data. Round your answer to one more decimal place than is present in the original data.

203 122 237 230 181 220 132 155 153

A) 22.7
B) 46.1
C) 43.1
D) 40.7

back 18

C) 43.1

---

front 19

Use the given degree of confidence and sample data to construct a confidence interval for the population proportion p.

n = 62, x = 19; 95% confidence

A) $0.190 < p < 0.422$
B) $0.191 < p < 0.421$
C) $0.209 < p < 0.403$
D) $0.210 < p < 0.402$

back 19

B) $0.191 < p < 0.421$

Stat / Tests / 1-PropZInt

---

front 20

The principal randomly selected six students to take an aptitude test. Their scores were:

77.0 75.1 75.6 81.3 88.4 77.4

Determine a 90% confidence interval for the mean score for all students.

A) $74.89 < \mu < 83.38$
B) $83.28 < \mu < 74.99$
C) $74.99 < \mu < 83.28$
D) $83.38 < \mu < 74.89$

back 20

C) $74.99 < \mu < 83.28$

Use L1
then Stat / Tests / TInterval

its flights is less than 6%. Of 380 randomly selected reservations, 18 were no-shows. Find the P-value for a test of the airline's claim.

A) 0.1230
B) 0.3508
C) 0.0746
D) 0.1492

D) 0.1492

1-PropZtest

front 22

A random sample of 139 forty-year-old men contains 26% smokers. Find the P-value for a test of the claim that the percentage of forty-year-old men that smoke is 22%.

A) 0.1401
B) 0.1271
C) 0.2542
D) 0.2802

back 22

C) 0.2542

front 23

The total number of phone calls a sales representative makes in a month is 425.

A) Discrete
B) Continuous

back 23

A) Discrete

front 24

A car insurance company has determined that 9% of all drivers were involved in a car accident last year. Among the 11 drivers living on one particular street, 3 were involved in a car accident last year. If 11 drivers are randomly selected, what is the probability of getting 3 or more who were involved in a car accident last year?

A) 0.070
B) 0.943
C) 0.424
D) 0.057

back 24

A) 0.070

binocdf
trials 11
p .09
x 2

.9305
1-.9305 = .0695

after graduation. Find the probability that among 6 randomly selected graduates, at least one finds a job in his or her chosen field within a year of graduating.

A) 0.995
B) 0.958
C) 0.590
D) 0.167

binocdf
trials 6
p .59
x 0

.00475
1-.00475 = .99525

front 26

Use the given data to find the minimum sample size required to estimate the population proportion.

Margin of error: 0.005; confidence level: 99%; from a prior study, p^ is estimated by 0.217.

A) 45,065
B) 225
C) 40,559
D) 26,109

back 26

A) 45,065

Za/2 for .99 = 2.576

$(2.576^2)*.217*(1-.217) = 1.1274$
$1.1274/.005^2$
45096?

front 27

A laboratory tested 82 chicken eggs and found that the mean amount of cholesterol was 238 milligrams with σ = 19.4 milligrams. Construct a 95% confidence interval for the true mean cholesterol content, μ, of all such eggs.

A) 235 mg < μ < 243 mg
B) 233 mg < μ < 241 mg
C) 233 mg < μ < 242 mg
D) 234 mg < μ < 242 mg

back 27

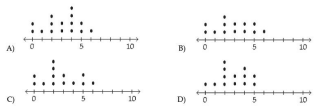
D) 234 mg < μ < 242 mg

E = Za/2*σ/√n
E= 1.96*(19.4/sqrt(82)) = 4.1

238-4 < μ < 238+4

or Stat / Tests / ZInterval

front 28

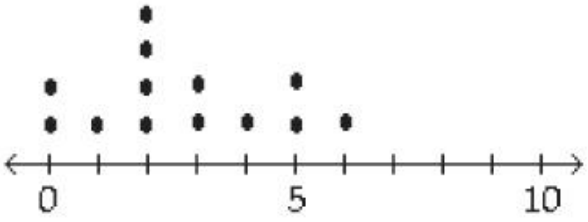


A manufacturer records the number of errors each work station makes during the week. The data are as follows.

6 3 2 3 5 2 0 2 5 4 2 0 1

back 28

C)



$34,199.86 worth of goods. Find Tuesday's z score.Was Tuesday an unusually good day?

A) 4.17, no
B) 5.47, no
C) 5.52, yes
D) 5.21, yes

D) 5.21, yes

($34,199.86 - $28,993.06)/$1000

---

front 30

Day	Mon	Tue	Wed	Thur	Fri
Absences	37	15	12	23	43

A company manager wishes to test a union leader's claim that absences occur on the different week days with the same frequencies. Test this claim at the 0.05 level of significance if the following sample data have been compiled.

back 30

H0: The proportions of absences are all the same.
H1: The proportions of absences are not all the same.
Test statistic: $\chi 2 = 28.308$.
Critical value: $\chi 2 = 9.488$.

Reject the null hypothesis. There is sufficient evidence to warrant rejection of the claim that absences occur on the different week days with the same frequency.

X2GOF-Test

---

front 31

	Yes	No	Undecided
Male	25	50	15
Female	20	30	10

Responses to a survey question are broken down according to gender and the sample results are given below. At the 0.05 significance level, test the claim that response and gender are independent.

back 31

H0: Gender and response are independent.
H1: Gender and response are dependent.
Test statistic: $\chi 2 = 0.579$.
Critical value: $\chi 2 = 5.991$.

Fail to reject the null hypothesis. There is not sufficient evidence to warrant rejection of the claim that response and gender are independent.

---

front 32

Various temperature measurements are recorded at different times for a particular city. The mean of 20°C is obtained for 60 temperatures on 60 different days. Assuming that $\sigma = 1.5$°C, test the claim that the population mean is 22°C. Use a 0.05 significance level.

back 32

H0: $\mu = 22$;
H1: $\mu \neq 22$.
Test statistic: $z = -10.33$.
P-value: 0.0002.

Because the P-value is less than the significance level of $\alpha = 0.05$,we reject the null hypothesis. There is sufficient evidence to warrant rejection of the claim that the population mean temperature is 22°C.

normally distributed population. Find the test statistic, P-value, critical value(s), and state the final conclusion.

Test the claim that the mean lifetime of car engines of a particular type is greater than 220,000 miles. Sample data are summarized as n = 23, x = 226,450 miles, and s = 11,500 miles. Use a significance level of $\alpha = 0.01$.

Test statistic: t = 2.6898
P-value: p = 0.0066
Critical value: t = 2.508

Because the test statistic, $t > 2.508$, we reject the null hypothesis. There is sufficient evidence to accept the claim that $\mu > 220{,}000$ miles.

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from 11.34

Assume that a simple random sample has been selected from a normally distributed population and test the given claim. Use either the traditional method or P-value method as indicated. Identify the null and alternative hypotheses, test statistic, critical value(s) or P-value (or range of P-values) as appropriate, and state the final conclusion that addresses the original claim.

In tests of a computer component, it is found that the mean time between failures is 520 hours. A modification is made which is supposed to increase the time between failures. Tests on a random sample of 10 modified components resulted in the following times (in hours) between failures.

518 548 561 523 536
499 538 557 528 563

At the 0.05 significance level, test the claim that for the modified components, the mean time between failures is greater than 520 hours. Use the P-value method of testing hypotheses.

back 34

H0: $\mu = 520$ hrs.
H1: $\mu > 520$ hrs.
Test statistic: t = 2.612.
$0.01 < \text{P-value} < 0.025$.

Reject H0. There is sufficient evidence to support the claim that the mean is greater than 520 hours.