

1. Gegee die volgende dataset: / **Given the following data set:**

1036	995	913	1028	993	941	1034
1013	1024	992	939	1034	955	1011

Bereken die variansie van die dataset. / **Calculate the variance of the data set.**

- a) 39.27 b) 40.75 c) 1660.57 d) 1541.96

2. Gegee die volgende dataset: / **Given the following data set:**

1036	995	913	1028	993	941	1034
1013	1024	992	939	1034	955	1011

Bereken die standaardafwyking van die dataset. / **Calculate the standard deviation of the data set.**

- a) 41.94 b) 40.75 c) 361.06 d) 18.47

3. Die standaardafwyking gee 'n aanduiding van die _____ van die dataset. / **The standard deviation gives an indication of the _____ of the dataset.**

- a) lokaliteit / **location** b) mediaan / **median** c) gemiddeld / **mean**
d) spreiding / **spread**

4. Beskou die data gegee hieronder en bereken die volgende. / **Consider the data given below and calculate the following.**

2 52 49 18 59 56 80 7
84 2 40 41 73 0 22 41

Die waarde van die rekenkundige gemiddeld is: / **The value of the arithmetic mean is:**

- a) 84 b) 41 c) 39.13 d) 2

5. Beskou die data gegee hieronder en bereken die volgende. / **Consider the data given below and calculate the following.**

2 52 49 18 59 56 80 7
84 2 40 41 73 0 22 41

Die waarde van die steekproefvariensie is: / **The value of the sample variance is:**

- a) 789.45 b) 84 c) 28.10 d) 39.13

6. Beskou die data gegee hieronder en bereken die volgende. / **Consider the data given below and calculate the following.**

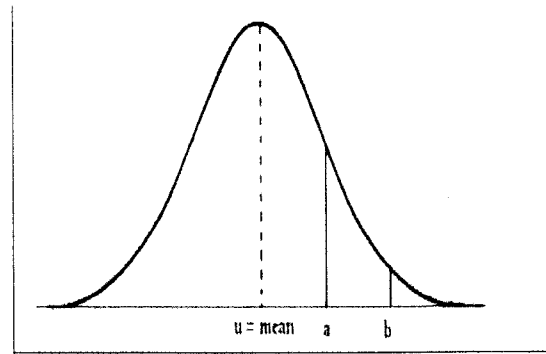
2 52 49 18 59 56 80 7
84 2 40 41 73 0 22 41

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Die waarde van die steekproef standaardafwyking is / **The value of the standard deviation is**

- a) 28.10 b) 789.45 c) 84 d) 39.13

7. Gegee die volgende normaalverdeling: / **Given the following normal distribution:**



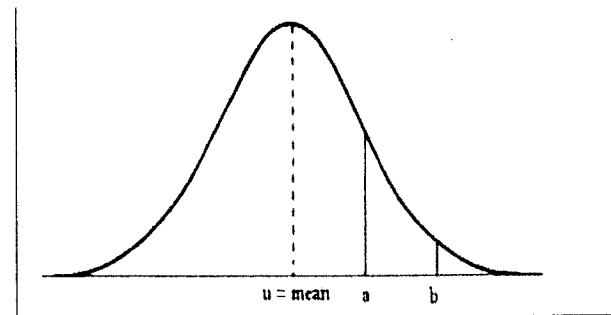
Die totale oppervlak onder die kurwe is gelyk aan: / **The total area under the curve is equal to:**

- a) 0 b) 1 c) 0.5 d) 3

8. 'n Normaalkurwe is: / **A normal curve is:**

- a) Simmetries/ **Symmetrical** b) Skeef na links/ **Skewed to the left**
c) Uniform / **Uniform** d) Skeef na regs/ **Skewed to the right**

9. Gegee die volgende normaalverdeling: / **Given the following normal distribution:**



Die oppervlak onder die kurwe tussen punte a en b is: / **The area under the curve between points a and b is:**

- a) $1 - P(X > a)$ b) 0.3 c) $1 - P(X < b)$ d) $P(a < X < b)$

10. As $X \sim N(\mu = 50, \sigma^2 = 225)$, dan is die gemiddelde van X gelyk aan:

/ **If $X \sim N(\mu = 50, \sigma^2 = 225)$, then the mean of X is equal to:**

- a) 15 b) 152 c) 502 d) 50

11. As $X \sim N(\mu = 50, \sigma^2 = 225)$, dan is die standaardafwyking van X gelyk aan:

/ **If $X \sim N(\mu = 50, \sigma^2 = 225)$, then the standard deviation of X is equal to:**

- a) 50 b) 15 c) 502 d) 225
12. As $z = 3$, dan is die oppervlak onder die standaardnormaalkurve gelyk aan:
/ **If $z = 3$, the area under the standard normal curve is equal to:**
a) 0.6179 b) 0.9987 c) 0.7580 d) 0.9995
13. Die oppervlak onder die standaardnormaalkurve links van $z = 2$ is: / **The area under the standard normal curve to the left of $z = 2$ is:**
a) 0.9772 b) 0.0227 c) 0.9987 d) 0.9959
14. Die oppervlak onder die standaardnormaalkurve regs van $z = 1.5$ is: / **The area under the standard normal curve to the right of $z = 1.5$ is:**
a) 0.9332 b) 0.6915 c) 0.3085 d) 0.0668
15. Die oppervlak onder die standaardnormaalkurve tussen die punte $z = 0.5$ en $z = 1.3$ is:
/ **The area under the standard normal curve between the points $z = 0.5$ and $z = 1.3$ is:**
a) 0.9032 b) 0.3085 c) 0.2117 d) 0.6915
16. Die diastoliese bloeddruk van 100 volwasse mans is verdeel as $X \sim N(\mu = 84, \sigma^2 = 36)$ / **Diastolic blood pressure measurements of 100 adult males is distributed as $X \sim N(\mu = 84, \sigma^2 = 36)$.**
Hoeveel mans het 'n bloeddruk van tussen 75 en 85? / **How many males have a blood pressure of between 75 and 85?**
a) 50 b) 60 c) 70 d) 84
17. Die diastoliese bloeddruk van 100 volwasse mans is verdeel as $X \sim N(\mu = 84, \sigma^2 = 36)$ / **Diastolic blood pressure measurements of 100 adult males is distributed as $X \sim N(\mu = 84, \sigma^2 = 36)$.**
Hoeveel mans is op 'n risiko van hoë bloeddruk (bloeddruk hoër as 90)? / **How many males are at risk of high blood pressure (blood pressure above 90)?**
a) 0.1587 b) 16 c) 15.8660 d) 12
18. Die diastoliese bloeddruk van 100 volwasse mans is verdeel as $X \sim N(\mu = 84, \sigma^2 = 36)$ / **Diastolic blood pressure measurements of 100 adult males is distributed as $X \sim N(\mu = 84, \sigma^2 = 36)$.**
Hoeveel mans lei aan lae bloeddruk (bloeddruk laer as 60)? / **How many males suffer from low blood pressure (blood pressure below 60)?**
a) 0 b) 1 c) 10 d) 11
19. Gegee die volgende datastel: / **Given the following data set:**
'n Puntberamer vir die populasiegemiddelde is: / **A point estimate for the population mean is:**

16	25	25	31	1	104	40	48
61	39	100	48	51	5	43	54

- a) 767.6523 b) 57.6406 c) 43.1875 d) 28.6152

20. Gegee die volgende datastel: / **Given the following data set:**
 'n Puntberamer vir die populasievariansie is: / **A point estimate for the population variance is:**

16	25	25	31	1	104	40	48
61	39	100	48	51	5	43	54

- a) 767.6523 b) 818.8292 c) 43.1875 d) 32.1081
21. Veronderstel die gewig van gorillas, in kg, is $N(155 ; 400)$ verdeel. Vind die waarskynlikheid dat die gewig van gorillas minder as 100 kg is. / **Suppose the masses of gorillas, in kg, are $N(155 ; 400)$ distributed. Find the probability of gorillas with masses less than 100 kg.**
 a) 0.9970 b) 0.003 c) 0.5557 d) 0.4443
22. Veronderstel die gewig van gorillas, in kg, is $N(155 ; 400)$ verdeel. Vind die waarskynlikheid dat die gewig van gorillas minder as 100 kg is. / **Suppose the masses of gorillas, in kg, are $N(155 ; 400)$ distributed. Find the probability of gorillas with masses less than 100 kg.**
 a) 0.5987 b) 0.8413 c) 0.44 d) 0.2426
23. Veronderstel die gewig van gorillas, in kg, is $N(155 ; 400)$ verdeel. Vind die waarskynlikheid dat die gewig van gorillas minder as 100 kg is. / **Suppose the masses of gorillas, in kg, are $N(155 ; 400)$ distributed. Find the probability of gorillas with masses less than 100 kg.**
 a) 0.0655 b) 0.8944 c) 0.9599 d) 0.8544
24. Veronderstel dat die gewig van studente, in kg, $N(68 ; 9)$ verdeel is. Vind die persentasie studente met gewig tussen 64 en 67 kg. / **Suppose the mass of students, in kg is $N(68 ; 9)$ distributed. Find the percentage of students with the masses between 64 and 67 kg.**
 a) 27.89% b) 0.6293 c) 0.2789 d) 0.5375
25. Indien / If $X \sim N(273 , 400)$, vind / find $P(215 < X < 237)$
 a) 0,034 b) 0,2563 c) 0,9622 d) 0,996
26. Indien $Z \sim N(0 , 1)$ bereken: / **If $Z \sim N(0 , 1)$, calculate: $P(Z > 1.63)$**
 a) 0.9484 b) 0.0516 c) 0.9445 d) 0.9544
27. Indien $Z \sim N(0 , 1)$ bereken: / **If $Z \sim N(0 , 1)$, calculate: $P(-3.40 < Z < -2.40)$**
 a) 0.9974 b) 0.9921 c) 0.9445 d) 0.0079
28. Indien $Z \sim N(0 , 1)$ bereken: / **If $Z \sim N(0 , 1)$, calculate: $P(-0.5 < Z < 1.5)$**
 a) 0.9974 b) 0.3753 c) 0.6247 d) 0.9429

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29. 'n Ekonoom stel belang om die inkomste van verbruikers van 'n sekere land te bestudeer. Die populasie standaardafwyking is R1000. 'n Ewekansige steekproef van 50 mense is gedoen en hulle het 'n gemiddelde inkomste van R15000 gehad. Wat is die onderste limiet in 'n 99% vertrouensinterval. / **An economist is interested in studying the incomes of consumers in a particular country. The population standard deviation is known to be R1000. A random sample of 50 individuals resulted in a mean income of R15000. What is the lower limit in a 99% confidence interval for the average income?**
 a) R15052 b) R15141 **c) R14636** d) R15330
30. 'n Ekonoom stel belang om die inkomste van verbruikers van 'n sekere land te bestudeer. Die populasie standaardafwyking is R1000. 'n Ewekansige steekproef van 50 mense is gedoen en hulle het 'n gemiddelde inkomste van R15000 gehad. Wat is die boonste limiet in 'n 99% vertrouensinterval. / **An economist is interested in studying the incomes of consumers in a particular country. The population standard deviation is known to be R1000. A random sample of 50 individuals resulted in a mean income of R15000. What is the upper limit in a 99% confidence interval for the average income?**
a) R15364 b) R15236 c) R14568 d) R15892
31. As jy 'n 99% verouensinterval van die populsie gemiddelde opstel waar die steekproefgrootte $n = 25$ is en die standaardafwyking $S = 0.05$, wat is die kritiese waarde, t ? / **If you were constructing a 99% confidence interval of the population mean based on a sample of $n = 25$ where the standard deviation of the sample $S = 0.05$, then the critical value, t will be. /**
 a) 2.7874 b) 2.4922 c) 2.4851 d) 2.7969
32. Dit word verlang om die gemiddelde totale betaling van uitvoerende hoofde in die diens- bedryf te bepaal. Data word ewekansig verkry van 18 mense en die 95% vertrouensinterval is bepaal as [R2181.26 ; R5836.18]. Watter een van die volgende interpretasies is korrek. / **It is desired to estimate the mean total compensation of CEOs in the Service industry. Data were randomly collected from 18 CEOs and the 95% confidence interval was calculated to be (R2181.26, R5836.18). Which of the following interpretations is correct?**
 a) 95% of the sample total compensation values fell between R2181.26 and R5836.18. / **95% van die steekproef totale vergoedingswaardes lê tussen R2181.26 en R5836.18.**
 b) We are 95% confident that the mean of the sample CEOs falls in the interval R2181.26 to R5836.18. / **Ons is 95% oortuig dat die gemiddelde van die steekproef uitvoerende hoofde val in die interval R2181.26 en R5836.18.**
 c) We are 95% confident that the mean total compensation of all CEOs in the Service industry falls in the interval R2181.26 to R5836.18. / **Ons is 95% oortuig dat die gemiddelde totale vergoeding van alle uitvoerende hoofde in die diens industrie in die interval R2181.26 tot R5836.18 wees.**
 d) In the population of Service industry CEOs, 95% of them will have total compensations that fall in the interval R2181.26 to R5836.18. / **In die populasie van die diens bedryf uitvoerende hoofde, sal 95% van hulle totale vergoeding in die interval R2181.26 tot R5836.18 val.**

33. It is desired to estimate the mean total compensation of CEOs in the Service industry. Data were randomly collected from 18 CEOs and the 95% confidence interval was calculated to be (R2181.26, R5836.18). Based on the interval above, do you believe the mean total compensation of CEOs in the Service industry is more than R3000? /

Dit word verlang om die gemiddelde totale betaling van uitvoerende hoofde in die diens-bedryf te bepaal. Data word ewekansige verkry van 18 mense af en die 95% interval was bepaal gewees om [R2181.26 ; R5836.18] te wees. Gebaseer op die inligting hier bo, glo jy dat die gemiddelde betaling meer is as R3000?

- a) I cannot conclude that the mean exceeds R3000 at the 95% confidence level. / **Ek kan nie die gevolgtrekking maak dat die gemiddelde oorskry R3000 by die 95% vertrouensinterval nie.**
- b) Yes, and I am 95% confident of it. / **Ja, en ek is 95% seker van dit.**
- c) Yes, and I am 78% confident of it. / **Ja, en ek is 78% seker van dit.**
- d) I am 95% confident that the mean compensation is R3000. / **Ek is 95% oortuig dat die gemiddelde vergoeding is R3000.**
34. A university dean is interested in determining the proportion of students who receive some sort of financial aid. Rather than examine the records for all students, the dean randomly selects 200 students and finds that 118 of them are receiving financial aid. The 95% confidence interval for p is 0.59 ± 0.07 . Interpret this interval. / 'n
- Universiteit dekaan stel belang om te bepaal wat is die persentasie van studente wat finansiële hulp het. Hy kies ewekansige 200 studente se rekords en vind dat 118 van hulle finansiële hulp ontvang. 'n 95% vertrouensinterval is $p = 0.59 \pm 0.07$. Interpreer hierdie interval**
- a) 95% of the students get between 52% and 66% of their tuition paid for by financial aid. / **95% van die studente kry tussen 52% en 66% van hul onderrig betaal deur die finansiële steun.**
- b) We are 95% confident that between 52% and 66% of the sampled students receive some sort of financial aid. / **Ons is 95% oortuig dat tussen 52% en 66% van die steekproef ontvang studente 'n soort van finansiële hulp.**
- c) We are 95% confident that 59% of the students are on some sort of financial aid. / **Ons is 95% oortuig dat 59% van die studente is op 'n soort van finansiële hulp.**
- d) We are 95% confident that the true proportion of all students receiving financial aid is between 0.52 and 0.66. / **Ons is 95% oortuig dat die ware verhouding van alle studente wat finansiële hulp ontvang, is tussen 0.52 en 0.66.**
35. The head librarian at the Bloemfontein Library has asked her assistant for an interval estimate of the mean number of books checked out each day. The assistant provides the following interval estimate: from 740 to 920 books per day. If the head librarian knows that the population standard deviation is 150 books checked out per day, approximately how large a sample did her assistant use to determine the interval estimate? / **Die hoof bibliotekaris by die Bloemfontein Biblioteek het haar assistent gevra om 'n interval te beraam vir die gemiddelde aantal boeke wat elke dag uitgeneem word. Die assistent het die volgende interval gekry: 740 tot 920 boeke per dag. As die hoof bibliotekaris weet dat die populasie standaardafwyking is 150 boeke per dag, ongeveer hoe groot was die steekproef wat die assistent gebruik?**
- a) 2 b) 3 c) 12

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d) It cannot be determined from the information given./ **Dit kan nie bepaal word met die inligting wat hier gegee is nie**

36. The head librarian at the Bloemfontein Library has asked her assistant for an interval estimate of the mean number of books checked out each day. The assistant provides the following interval estimate: from 740 to 920 books per day. If the head librarian knows that the population standard deviation is 150 books checked out per day, and she asked her assistant for a 95% confidence interval, approximately how large a sample did her assistant use to determine the interval estimate? / **Die hoof bibliotekaris by die Bloemfontein Biblioteek het haar assistent gevra om 'n 95% vertouensinterval te beraam vir die gemiddelde aantal boeke wat elke dag uitgeneem word. Die assistent het die volgende interval gekry: 740 tot 920 boeke per dag. As die hoof bibliotekaris weet dat die populasie standaard afwyking 150 boeke per dag is, ongeveer hoe groot was die steekproef wat die assistent gebruik?**
- a) 125 b) 11 c) 13 d) 4
37. The head librarian at the Bloemfontein Library has asked her assistant for an interval estimate of the mean number of books checked out each day. The assistant provides the following interval estimate: from 740 to 920 books per day. If the head librarian knows that the population standard deviation is 150 books checked out per day, and she asked her assistant to use 25 days of data to construct the interval estimate, what confidence level can she attach to the interval estimate? / **Die hoof bibliotekaris by die Bloemfontein Biblioteek het haar assistent gevra om 'n interval te beraam vir die gemiddelde aantal boeke wat elke dag uitgeneem word en dat sy 25 dae se data moet gebruik. Die assistent het die volgende interval gekry: 740 tot 920 boeke per dag. As die hoof bibliotekaris weet die populasie standaardafwyking 150 boeke per dag is, watter bepaaldheidsvlak kan sy koppel aan die beraming?**
- a) 99.0% b) 98.0% c) 99.8% d) 95.4%
38. An economist is interested in studying the incomes of consumers in a particular country. The population standard deviation is known to be R1,000. A random sample of 50 individuals resulted in a mean income of R15,000. What total sample size would the economist need to use for a 95% confidence interval if the width of the interval should not be more than R100? / **'n Ekoonoom stel belang om die inkomste van 'n sekere land te bestudeer. Die populasie standaardafwyking is R1000. 'n Ewekansige steekproef van 50 mense is getrek en hulle het 'n gemiddelde inkomste van R15000 gehad. Wat is die totale steekproefgrootte wat nodig sal wees vir 'n 95% vertouensinterval waar die wydte nie meer is as R100 nie?**
- a) ☒ $n = 385$ b) $n = 1537$ c) $n = 40$ d) $n = 20$
39. The life span of an electronic chip used in a high powered microcomputer is estimated to be an average of 650.25 hours from a random sample of 60 chips. The life of an electronic chip is considered to be normally distributed with a population variance of 900 hours. Test at the 10% significance level whether the true mean life of the electronic chips differ from 640 hours. Determine the null hypothesis./ **Die lewensduur van 'n elektroniese skyfie wat gebruik word in mikrorekenaar het 'n gemiddeld van 650.25 uur wat verkry word uit 'n ewekansige steekproef van 60 skyfies. Die**

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lewe van 'n elektroniese skyfie het 'n populasie variansie van 900 uur. Toets by 'n 10% betekenispeil of die ware gemiddelde lewe van die elektroniese skyfies verskil van 640 ure. Bepaal die nulhipotese.

- a) $H_0 : \mu > 640$ b) $H_0 : \mu = 640$ c) $H_0 : \mu = 650.25$ d) $H_0 : \mu < 650.25$

40. The life span of an electronic chip used in a high powered microcomputer is estimated to be an average of 650.25 hours from a random sample of 60 chips. The life of an electronic chip is considered to be normally distributed with a population variance of 900 hours. Test at the 10% significance level whether the true mean life of the electronic chips differ from 640 hours. Determine the alternative hypothesis. / **Die lewensduur van 'n elektroniese skyfie wat gebruik word in mikrorekenaar het 'n gemiddeld van 650.25 uur wat verkry word uit 'n ewekansige steekproef van 60 skyfies. Die lewe van 'n elektroniese skyfie het 'n populasie variansie van 900 uur. Toets by 'n 10% betekenispeil of die ware gemiddelde lewe van die elektroniese skyfies verskil van 640 ure. Bepaal die alternatiewe hipotese**

- a) $H_1 : \mu > 650.25$ b) $H_1 : \mu < 640$ c) $H_1 : \mu \neq 640$ d) $H_1 : \mu \neq 650.25$

41. The life span of an electronic chip used in a high powered microcomputer is estimated to be an average of 650.25 hours from a random sample of 60 chips. The life of an electronic chip is considered to be normally distributed with a population variance of 900 hours. Test at the 10% significance level whether the true mean life of the electronic chips differ from 640 hours. Determine the test statistic value. / **Die lewensduur van 'n elektroniese skyfie wat gebruik word in mikrorekenaar het 'n gemiddeld van 650.25 uur wat verkry word uit 'n ewekansige steekproef van 60 skyfies. Die lewe van 'n elektroniese skyfie het 'n populasie variansie van 900 uur. Toets by 'n 10% betekenispeil of die ware gemiddelde lewe van die elektroniese skyfies verskil van 640 ure. Bepaal die toets statistiek waarde.**

- a) 2.6465 b) 3.6982 c) -1.5898 d) 2.1198

42. The life span of an electronic chip used in a high powered microcomputer is estimated to be an average of 650.25 hours from a random sample of 60 chips. The life of an electronic chip is considered to be normally distributed with a population variance of 900 hours. Test at the 10% significance level whether the true mean life of the electronic chips differ from 640 hours. Determine the critical value. / **Die lewensduur van 'n elektroniese skyfie wat gebruik word in mikrorekenaar het 'n gemiddeld van 650.25 uur wat verkry word uit 'n ewekansige steekproef van 60 skyfies. Die lewe van 'n elektroniese skyfie het 'n populasie variansie van 900 uur. Toets by 'n 10% betekenispeil of die ware gemiddelde lewe van die elektroniese skyfies verskil van 640 ure. Bepaal die kritiese waarde.**

- a) -1.36 b) 1.645 c) 2.88 d) -0.96

43. The life span of an electronic chip used in a high powered microcomputer is estimated to be an average of 650.25 hours from a random sample of 60 chips. The life of an electronic chip is considered to be normally distributed with a population variance of 900 hours. Test at the 10% significance level whether the true mean life of the electronic chips differ from 640 hours. Can H_0 be rejected? / **Die lewensduur van 'n**

elektroniese skyfie wat gebruik word in mikrorekenaar het 'n gemiddeld van 650.25 uur wat verkry word uit 'n ewekansige steekproef van 60 skyfies. Die lewe van 'n elektroniese skyfie het 'n populasie variansie van 900 uur. Toets by 'n 10% betekenispeil of die ware gemiddelde lewe van die elektroniese skyfies verskil van 640 ure. Kan H_0 verwerp word?

a) Yes / JA

b) No / Nee

c) No conclusion / Geen gevolgtrekking

44. Easy-Fly Airline took a random sample of 20 flights to determine if the mean time it takes for luggage to reach the travellers departing from a flight is less than 17 minutes. The sample mean was found to be 12.7 minutes with a standard deviation of 6 minutes. Assume that the time in minutes has a normal distribution. Test at the 5% level of significance whether the true mean time it takes for luggage to reach the travelers is less than 17 minutes. Determine the null hypothesis. / Easy-Fly vliegtuig het 'n ewekansige steekproef van 20 vlugte geneem om te bepaal of die gemiddelde tyd wat dit neem vir die bagasie om die reisigers wat vertrek vir 'n vlug, minder is as 17 minute. Die steekproefgemiddelde was 12.7 minute met 'n standaardafwyking van 6 minute. Aanvaar dat die tyd in minute normaal verdeel is. Toets op die 5% peil van betekenis of die ware gemiddelde tyd wat dit neem vir bagasie die reisigers te bereik, minder is as 17 minute. Bepaal die nulhipotese

a) $H_0 : \mu < 17$ b). $H_0 : \mu = 12.7$

c) $H_0 : \mu < 12.7$

d) $H_0 : \mu = 17$

45. Easy-Fly Airline took a random sample of 20 flights to determine if the mean time it takes for luggage to reach the travellers departing from a flight is less than 17 minutes. The sample mean was found to be 12.7 minutes with a standard deviation of 6 minutes. Assume that the time in minutes has a normal distribution. Test at the 5% level of significance whether the true mean time it takes for luggage to reach the travelers is less than 17 minutes. Determine the alternative hypothesis. / Easy-Fly vliegtuig het 'n ewekansige steekproef van 20 vlugte geneem om te bepaal of die gemiddelde tyd wat dit neem vir die bagasie om die reisigers wat vertrek vir 'n vlug, minder is as 17 minute. Die steekproefgemiddelde was 12.7 minute met 'n standaardafwyking van 6 minute. Aanvaar dat die tyd in minute normaal verdeel is. Toets op die 5% peil van betekenis of die ware gemiddelde tyd wat dit neem vir bagasie die reisigers te bereik, minder is as 17 minute. Bepaal die alternatiewe hipotese

a) $H_1 : \mu < 17$

b) $H_1 : \mu < 12.7$

c) $H_1 : \mu > 17$

d) $H_1 : \mu > 12.7$

46)

Easy-Fly Airline took a random sample of 20 flights to determine if the mean time it takes for luggage to reach the travellers departing from a flight is less than 17 minutes. The sample mean was found to be 12.7 minutes with a standard deviation of 6 minutes. Assume that the time in minutes has a normal distribution. Test at the 5% level of significance whether the true mean time it takes for luggage to reach the travellers is less than 17 minutes. Determine the test statistic value. / Easy-Fly vliegtuig het 'n ewekansige steekproef van 20 vlugte geneem om te bepaal of die gemiddelde tyd wat dit neem vir die bagasie om die reisigers wat vertrek vir 'n vlug, minder is as 17 minute. Die steekproefgemiddelde was 12.7 minute met 'n standaardafwyking van 6 minute. Aanvaar dat die tyd in minute normaal verdeel is. Toets op die 5% peil van betekenis of die ware gemiddelde tyd wat dit neem vir bagasie die reisigers te bereik, minder is as 17 minute. Bepaal die toets statistiek waarde.

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- a) -3.205 b) 1.915 c) -1.958 d) 2.118
47. Easy-Fly Airline took a random sample of 20 flights to determine if the mean time it takes for luggage to reach the travellers departing from a flight is less than 17 minutes. The sample mean was found to be 12.7 minutes with a standard deviation of 6 minutes. Assume that the time in minutes has a normal distribution. Test at the 5% level of significance whether the true mean time it takes for luggage to reach the travellers is less than 17 minutes. Determine the null hypothesis. Determine the critical value. / **Easy-Fly vliegtuig het 'n ewekansige steekproef van 20 vlugte geneem om te bepaal of die gemiddelde tyd wat dit neem vir die bagasie om die reisigers wat vertrek vir 'n vlug, minder is as 17 minute. Die steekproefgemiddelde was 12.7 minute met 'n standaardafwyking van 6 minute. Aanvaar dat die tyd in minute normaal verdeel is. Toets op die 5% peil van betekenis of die ware gemiddelde tyd wat dit neem vir bagasie die reisigers te bereik, minder is as 17 minute. Bepaal die kritiese waarde**
- a) -1.962 b) -2.393 c) 2.348 d) -1.729
48. Easy-Fly Airline took a random sample of 20 flights to determine if the mean time it takes for luggage to reach the travellers departing from a flight is less than 17 minutes. The sample mean was found to be 12.7 minutes with a standard deviation of 6 minutes. Assume that the time in minutes has a normal distribution. Test at the 5% level of significance whether the true mean time it takes for luggage to reach the travellers is less than 17 minutes. Can H_0 be rejected? / **Easy-Fly vliegtuig het 'n ewekansige steekproef van 20 vlugte geneem om te bepaal of die gemiddelde tyd wat dit neem vir die bagasie om die reisigers wat vertrek vir 'n vlug, minder is as 17 minute. Die steekproefgemiddelde was 12.7 minute met 'n standaardafwyking van 6 minute. Aanvaar dat die tyd in minute normaal verdeel is. Toets op die 5% peil van betekenis of die ware gemiddelde tyd wat dit neem vir bagasie die reisigers te bereik, minder is as 17 minute. Kan H_0 verwerp word?**
- a) Yes / Ja b) No / Nee c) No conclusion / **Geen gevolgtrekking**
49. 'n Steekproef van grootte 200 word geneem. Die standaardafwyking van die steekproef is 5 en die gemiddeld is 30. Bereken die bogrens van 'n 95% vertrouensinterval vir die populasiegemiddelde. / **A sample of size 200 is taken. The standard deviation of the sample is 5 and the mean is 30. Calculate the upper limit of a 95% confidence interval for the population mean.**
- a) 30.693 b) 29.327 c) 9.158 d) 30.31
50. 'n Steekproef van grootte 20 word geneem uit 'n normaalpopulasie. Die standaardafwyking van die steekproef is 5 en die gemiddeld is 30. Bereken die bogrens van 'n 95% vertrouensinterval vir die populasiegemiddelde. / **A sample of size 20 is taken from a normal population. The standard deviation of the sample is 5 and the mean is 30. Calculate the upper limit of a 95% confidence interval for the population mean.**
- a) 32.34 b) 28.933 c) 9.002 d) 35.56
51. Bepaal die steekproefgrootte wat benodig word om 'n populasie proporsie te skat

binne 'n afstand van 0.05, met 90% vertroue. Gegronde op vorige ondervinding, aanvaar dat die benaderde waarde van die steekproef proporsie 0.3 is. / **Determine the sample size necessary to estimate a population proportion to within 0.05 with 90% confidence. Based on previous experience, assume that the approximate value of the sample proportion is 0.3.**

a) 228

b) 138

c) 7

d) 12

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