Type: FMB

Points: 12

1. Lucky claims that the average cell phone expense for a Lucky customer is $83 per month. Ryan feels that average monthly cell phone expenses are higher than $83 per month. Olivia conducts a random sample of 46 Lucky customers and finds that the average monthly cell expense was $97 with a standard deviation of $17.

Based on the above sample data, is there enough evidence to conclude that the cell phone expense is greater than $83? Test the hypothesis at the 10% level of significance.

**HYPOTHES**

What are the null and alternative hypotheses?

Enter the LETTER of the correct answer

A. H0: μ = $83; HA: μ ≠ $83

B. H0: μ = $83; HA: μ < $83 (μ is less than $83)

C. H0: μ = $83; HA: μ > $83 (μ is more than $83)

D. H0: μ = $97; HA: μ ≠ $97

E. H0: μ = $97; HA: μ > $97 (μ is more than $97)

F. H0: μ = $97; HA: μ < $97 (μ is less than $97)

ANSWER: [C, c]

**HYPOTHESIS TEST**

Critical Value (*3 decimal places*): [1.301]

Decision Rule: [Reject if T-test > 1.301]

Test Statistic (*3 decimal places*): : [5.585]

**DECISION AND CONCLUSION**

Decision: [Reject H\_0]

Conclusion. Enter the LETTER of the correct answer

A. Yes, there is enough evidence to conclude that the average cell phone bill is higher than Lucky claims.

B. No, there is not enough evidence to conclude the average conclude the average cell phone bill is higher than Lucky claims.

ANSWER: [A, a]

Type: FMB

Points: 12

2. SaskTel claims that the average cell phone expense for a SaskTel customer is $69 per month. James feels that average monthly cell phone expenses are higher than $69 per month. Olivia conducts a random sample of 33 SaskTel customers and finds that the average monthly cell expense was $71 with a standard deviation of $23.

Based on the above sample data, is there enough evidence to conclude that the cell phone expense is greater than $69? Test the hypothesis at the 5% level of significance.

**HYPOTHES**

What are the null and alternative hypotheses?

Enter the LETTER of the correct answer

A. H0: μ = $69; HA: μ ≠ $69

B. H0: μ = $69; HA: μ < $69 (μ is less than $69)

C. H0: μ = $69; HA: μ > $69 (μ is more than $69)

D. H0: μ = $71; HA: μ ≠ $71

E. H0: μ = $71; HA: μ > $71 (μ is more than $71)

F. H0: μ = $71; HA: μ < $71 (μ is less than $71)

ANSWER: [C, c]

**HYPOTHESIS TEST**

Critical Value (*3 decimal places*): [1.694]

Decision Rule: [Reject if T-test > 1.694]

Test Statistic (*3 decimal places*): : [.5]

**DECISION AND CONCLUSION**

Decision: [Fail to Reject]

Conclusion. Enter the LETTER of the correct answer

A. Yes, there is enough evidence to conclude that the average cell phone bill is higher than SaskTel claims.

B. No, there is not enough evidence to conclude the average conclude the average cell phone bill is higher than SaskTel claims.

ANSWER: [B, b]

Type: FMB

Points: 12

3. Bell claims that the average cell phone expense for a Bell customer is $70 per month. Olivia feels that average monthly cell phone expenses are higher than $70 per month. Olivia conducts a random sample of 40 Bell customers and finds that the average monthly cell expense was $72 with a standard deviation of $13.

Based on the above sample data, is there enough evidence to conclude that the cell phone expense is greater than $70? Test the hypothesis at the 1% level of significance.

**HYPOTHES**

What are the null and alternative hypotheses?

Enter the LETTER of the correct answer

A. H0: μ = $70; HA: μ ≠ $70

B. H0: μ = $70; HA: μ < $70 (μ is less than $70)

C. H0: μ = $70; HA: μ > $70 (μ is more than $70)

D. H0: μ = $72; HA: μ ≠ $72

E. H0: μ = $72; HA: μ > $72 (μ is more than $72)

F. H0: μ = $72; HA: μ < $72 (μ is less than $72)

ANSWER: [C, c]

**HYPOTHESIS TEST**

Critical Value (*3 decimal places*): [2.426]

Decision Rule: [Reject if T-test > 2.426]

Test Statistic (*3 decimal places*): : [.973]

**DECISION AND CONCLUSION**

Decision: [Fail to Reject]

Conclusion. Enter the LETTER of the correct answer

A. Yes, there is enough evidence to conclude that the average cell phone bill is higher than Bell claims.

B. No, there is not enough evidence to conclude the average conclude the average cell phone bill is higher than Bell claims.

ANSWER: [B, b]

Type: FMB

Points: 12

4. Rogers claims that the average cell phone expense for a Rogers customer is $65 per month. Joaquin feels that average monthly cell phone expenses are higher than $65 per month. Olivia conducts a random sample of 42 Rogers customers and finds that the average monthly cell expense was $73 with a standard deviation of $16.

Based on the above sample data, is there enough evidence to conclude that the cell phone expense is greater than $65? Test the hypothesis at the 10% level of significance.

**HYPOTHES**

What are the null and alternative hypotheses?

Enter the LETTER of the correct answer

A. H0: μ = $65; HA: μ ≠ $65

B. H0: μ = $65; HA: μ < $65 (μ is less than $65)

C. H0: μ = $65; HA: μ > $65 (μ is more than $65)

D. H0: μ = $73; HA: μ ≠ $73

E. H0: μ = $73; HA: μ > $73 (μ is more than $73)

F. H0: μ = $73; HA: μ < $73 (μ is less than $73)

ANSWER: [C, c]

**HYPOTHESIS TEST**

Critical Value (*3 decimal places*): [1.303]

Decision Rule: [Reject if T-test > 1.303]

Test Statistic (*3 decimal places*): : [3.24]

**DECISION AND CONCLUSION**

Decision: [Reject H\_0]

Conclusion. Enter the LETTER of the correct answer

A. Yes, there is enough evidence to conclude that the average cell phone bill is higher than Rogers claims.

B. No, there is not enough evidence to conclude the average conclude the average cell phone bill is higher than Rogers claims.

ANSWER: [A, a]

Type: FMB

Points: 12

5. Lucky claims that the average cell phone expense for a Lucky customer is $69 per month. Simran feels that average monthly cell phone expenses are higher than $69 per month. Olivia conducts a random sample of 41 Lucky customers and finds that the average monthly cell expense was $73 with a standard deviation of $23.

Based on the above sample data, is there enough evidence to conclude that the cell phone expense is greater than $69? Test the hypothesis at the 1% level of significance.

**HYPOTHES**

What are the null and alternative hypotheses?

Enter the LETTER of the correct answer

A. H0: μ = $69; HA: μ ≠ $69

B. H0: μ = $69; HA: μ < $69 (μ is less than $69)

C. H0: μ = $69; HA: μ > $69 (μ is more than $69)

D. H0: μ = $73; HA: μ ≠ $73

E. H0: μ = $73; HA: μ > $73 (μ is more than $73)

F. H0: μ = $73; HA: μ < $73 (μ is less than $73)

ANSWER: [C, c]

**HYPOTHESIS TEST**

Critical Value (*3 decimal places*): [2.423]

Decision Rule: [Reject if T-test > 2.423]

Test Statistic (*3 decimal places*): : [1.114]

**DECISION AND CONCLUSION**

Decision: [Fail to Reject]

Conclusion. Enter the LETTER of the correct answer

A. Yes, there is enough evidence to conclude that the average cell phone bill is higher than Lucky claims.

B. No, there is not enough evidence to conclude the average conclude the average cell phone bill is higher than Lucky claims.

ANSWER: [B, b]

Type: FMB

Points: 12

6. SaskTel claims that the average cell phone expense for a SaskTel customer is $86 per month. Loki feels that average monthly cell phone expenses are higher than $86 per month. Olivia conducts a random sample of 39 SaskTel customers and finds that the average monthly cell expense was $91 with a standard deviation of $14.

Based on the above sample data, is there enough evidence to conclude that the cell phone expense is greater than $86? Test the hypothesis at the 1% level of significance.

**HYPOTHES**

What are the null and alternative hypotheses?

Enter the LETTER of the correct answer

A. H0: μ = $86; HA: μ ≠ $86

B. H0: μ = $86; HA: μ < $86 (μ is less than $86)

C. H0: μ = $86; HA: μ > $86 (μ is more than $86)

D. H0: μ = $91; HA: μ ≠ $91

E. H0: μ = $91; HA: μ > $91 (μ is more than $91)

F. H0: μ = $91; HA: μ < $91 (μ is less than $91)

ANSWER: [C, c]

**HYPOTHESIS TEST**

Critical Value (*3 decimal places*): [2.429]

Decision Rule: [Reject if T-test > 2.429]

Test Statistic (*3 decimal places*): : [2.23]

**DECISION AND CONCLUSION**

Decision: [Fail to Reject]

Conclusion. Enter the LETTER of the correct answer

A. Yes, there is enough evidence to conclude that the average cell phone bill is higher than SaskTel claims.

B. No, there is not enough evidence to conclude the average conclude the average cell phone bill is higher than SaskTel claims.

ANSWER: [B, b]

Type: FMB

Points: 12

7. Shaw claims that the average cell phone expense for a Shaw customer is $75 per month. James feels that average monthly cell phone expenses are higher than $75 per month. Olivia conducts a random sample of 37 Shaw customers and finds that the average monthly cell expense was $84 with a standard deviation of $14.

Based on the above sample data, is there enough evidence to conclude that the cell phone expense is greater than $75? Test the hypothesis at the 10% level of significance.

**HYPOTHES**

What are the null and alternative hypotheses?

Enter the LETTER of the correct answer

A. H0: μ = $75; HA: μ ≠ $75

B. H0: μ = $75; HA: μ < $75 (μ is less than $75)

C. H0: μ = $75; HA: μ > $75 (μ is more than $75)

D. H0: μ = $84; HA: μ ≠ $84

E. H0: μ = $84; HA: μ > $84 (μ is more than $84)

F. H0: μ = $84; HA: μ < $84 (μ is less than $84)

ANSWER: [C, c]

**HYPOTHESIS TEST**

Critical Value (*3 decimal places*): [1.306]

Decision Rule: [Reject if T-test > 1.306]

Test Statistic (*3 decimal places*): : [3.91]

**DECISION AND CONCLUSION**

Decision: [Reject H\_0]

Conclusion. Enter the LETTER of the correct answer

A. Yes, there is enough evidence to conclude that the average cell phone bill is higher than Shaw claims.

B. No, there is not enough evidence to conclude the average conclude the average cell phone bill is higher than Shaw claims.

ANSWER: [A, a]

Type: FMB

Points: 12

8. Virgin Mobile claims that the average cell phone expense for a Virgin Mobile customer is $96 per month. Ava feels that average monthly cell phone expenses are higher than $96 per month. Olivia conducts a random sample of 42 Virgin Mobile customers and finds that the average monthly cell expense was $111 with a standard deviation of $11.

Based on the above sample data, is there enough evidence to conclude that the cell phone expense is greater than $96? Test the hypothesis at the 2% level of significance.

**HYPOTHES**

What are the null and alternative hypotheses?

Enter the LETTER of the correct answer

A. H0: μ = $96; HA: μ ≠ $96

B. H0: μ = $96; HA: μ < $96 (μ is less than $96)

C. H0: μ = $96; HA: μ > $96 (μ is more than $96)

D. H0: μ = $111; HA: μ ≠ $111

E. H0: μ = $111; HA: μ > $111 (μ is more than $111)

F. H0: μ = $111; HA: μ < $111 (μ is less than $111)

ANSWER: [C, c]

**HYPOTHESIS TEST**

Critical Value (*3 decimal places*): [2.121]

Decision Rule: [Reject if T-test > 2.121]

Test Statistic (*3 decimal places*): : [8.837]

**DECISION AND CONCLUSION**

Decision: [Reject H\_0]

Conclusion. Enter the LETTER of the correct answer

A. Yes, there is enough evidence to conclude that the average cell phone bill is higher than Virgin Mobile claims.

B. No, there is not enough evidence to conclude the average conclude the average cell phone bill is higher than Virgin Mobile claims.

ANSWER: [A, a]

Type: FMB

Points: 12

9. Primus claims that the average cell phone expense for a Primus customer is $92 per month. James feels that average monthly cell phone expenses are higher than $92 per month. Olivia conducts a random sample of 48 Primus customers and finds that the average monthly cell expense was $104 with a standard deviation of $20.

Based on the above sample data, is there enough evidence to conclude that the cell phone expense is greater than $92? Test the hypothesis at the 10% level of significance.

**HYPOTHES**

What are the null and alternative hypotheses?

Enter the LETTER of the correct answer

A. H0: μ = $92; HA: μ ≠ $92

B. H0: μ = $92; HA: μ < $92 (μ is less than $92)

C. H0: μ = $92; HA: μ > $92 (μ is more than $92)

D. H0: μ = $104; HA: μ ≠ $104

E. H0: μ = $104; HA: μ > $104 (μ is more than $104)

F. H0: μ = $104; HA: μ < $104 (μ is less than $104)

ANSWER: [C, c]

**HYPOTHESIS TEST**

Critical Value (*3 decimal places*): [1.3]

Decision Rule: [Reject if T-test > 1.3]

Test Statistic (*3 decimal places*): : [4.157]

**DECISION AND CONCLUSION**

Decision: [Reject H\_0]

Conclusion. Enter the LETTER of the correct answer

A. Yes, there is enough evidence to conclude that the average cell phone bill is higher than Primus claims.

B. No, there is not enough evidence to conclude the average conclude the average cell phone bill is higher than Primus claims.

ANSWER: [A, a]

Type: FMB

Points: 12

10. Lucky claims that the average cell phone expense for a Lucky customer is $88 per month. Alexander feels that average monthly cell phone expenses are higher than $88 per month. Olivia conducts a random sample of 41 Lucky customers and finds that the average monthly cell expense was $96 with a standard deviation of $21.

Based on the above sample data, is there enough evidence to conclude that the cell phone expense is greater than $88? Test the hypothesis at the 2% level of significance.

**HYPOTHES**

What are the null and alternative hypotheses?

Enter the LETTER of the correct answer

A. H0: μ = $88; HA: μ ≠ $88

B. H0: μ = $88; HA: μ < $88 (μ is less than $88)

C. H0: μ = $88; HA: μ > $88 (μ is more than $88)

D. H0: μ = $96; HA: μ ≠ $96

E. H0: μ = $96; HA: μ > $96 (μ is more than $96)

F. H0: μ = $96; HA: μ < $96 (μ is less than $96)

ANSWER: [C, c]

**HYPOTHESIS TEST**

Critical Value (*3 decimal places*): [2.123]

Decision Rule: [Reject if T-test > 2.123]

Test Statistic (*3 decimal places*): : [2.439]

**DECISION AND CONCLUSION**

Decision: [Reject H\_0]

Conclusion. Enter the LETTER of the correct answer

A. Yes, there is enough evidence to conclude that the average cell phone bill is higher than Lucky claims.

B. No, there is not enough evidence to conclude the average conclude the average cell phone bill is higher than Lucky claims.

ANSWER: [A, a]

Type: FMB

Points: 12

11. Rogers claims that the average cell phone expense for a Rogers customer is $91 per month. Sophia feels that average monthly cell phone expenses are higher than $91 per month. Olivia conducts a random sample of 35 Rogers customers and finds that the average monthly cell expense was $97 with a standard deviation of $10.

Based on the above sample data, is there enough evidence to conclude that the cell phone expense is greater than $91? Test the hypothesis at the 5% level of significance.

**HYPOTHES**

What are the null and alternative hypotheses?

Enter the LETTER of the correct answer

A. H0: μ = $91; HA: μ ≠ $91

B. H0: μ = $91; HA: μ < $91 (μ is less than $91)

C. H0: μ = $91; HA: μ > $91 (μ is more than $91)

D. H0: μ = $97; HA: μ ≠ $97

E. H0: μ = $97; HA: μ > $97 (μ is more than $97)

F. H0: μ = $97; HA: μ < $97 (μ is less than $97)

ANSWER: [C, c]

**HYPOTHESIS TEST**

Critical Value (*3 decimal places*): [1.691]

Decision Rule: [Reject if T-test > 1.691]

Test Statistic (*3 decimal places*): : [3.55]

**DECISION AND CONCLUSION**

Decision: [Reject H\_0]

Conclusion. Enter the LETTER of the correct answer

A. Yes, there is enough evidence to conclude that the average cell phone bill is higher than Rogers claims.

B. No, there is not enough evidence to conclude the average conclude the average cell phone bill is higher than Rogers claims.

ANSWER: [A, a]

Type: FMB

Points: 12

12. Fizz claims that the average cell phone expense for a Fizz customer is $95 per month. Jagmit feels that average monthly cell phone expenses are higher than $95 per month. Olivia conducts a random sample of 37 Fizz customers and finds that the average monthly cell expense was $110 with a standard deviation of $10.

Based on the above sample data, is there enough evidence to conclude that the cell phone expense is greater than $95? Test the hypothesis at the 5% level of significance.

**HYPOTHES**

What are the null and alternative hypotheses?

Enter the LETTER of the correct answer

A. H0: μ = $95; HA: μ ≠ $95

B. H0: μ = $95; HA: μ < $95 (μ is less than $95)

C. H0: μ = $95; HA: μ > $95 (μ is more than $95)

D. H0: μ = $110; HA: μ ≠ $110

E. H0: μ = $110; HA: μ > $110 (μ is more than $110)

F. H0: μ = $110; HA: μ < $110 (μ is less than $110)

ANSWER: [C, c]

**HYPOTHESIS TEST**

Critical Value (*3 decimal places*): [1.688]

Decision Rule: [Reject if T-test > 1.688]

Test Statistic (*3 decimal places*): : [9.124]

**DECISION AND CONCLUSION**

Decision: [Reject H\_0]

Conclusion. Enter the LETTER of the correct answer

A. Yes, there is enough evidence to conclude that the average cell phone bill is higher than Fizz claims.

B. No, there is not enough evidence to conclude the average conclude the average cell phone bill is higher than Fizz claims.

ANSWER: [A, a]

Type: FMB

Points: 12

13. Primus claims that the average cell phone expense for a Primus customer is $72 per month. Sophia feels that average monthly cell phone expenses are higher than $72 per month. Olivia conducts a random sample of 35 Primus customers and finds that the average monthly cell expense was $78 with a standard deviation of $17.

Based on the above sample data, is there enough evidence to conclude that the cell phone expense is greater than $72? Test the hypothesis at the 10% level of significance.

**HYPOTHES**

What are the null and alternative hypotheses?

Enter the LETTER of the correct answer

A. H0: μ = $72; HA: μ ≠ $72

B. H0: μ = $72; HA: μ < $72 (μ is less than $72)

C. H0: μ = $72; HA: μ > $72 (μ is more than $72)

D. H0: μ = $78; HA: μ ≠ $78

E. H0: μ = $78; HA: μ > $78 (μ is more than $78)

F. H0: μ = $78; HA: μ < $78 (μ is less than $78)

ANSWER: [C, c]

**HYPOTHESIS TEST**

Critical Value (*3 decimal places*): [1.307]

Decision Rule: [Reject if T-test > 1.307]

Test Statistic (*3 decimal places*): : [2.088]

**DECISION AND CONCLUSION**

Decision: [Reject H\_0]

Conclusion. Enter the LETTER of the correct answer

A. Yes, there is enough evidence to conclude that the average cell phone bill is higher than Primus claims.

B. No, there is not enough evidence to conclude the average conclude the average cell phone bill is higher than Primus claims.

ANSWER: [A, a]

Type: FMB

Points: 12

14. Koodo claims that the average cell phone expense for a Koodo customer is $80 per month. Lucas feels that average monthly cell phone expenses are higher than $80 per month. Olivia conducts a random sample of 48 Koodo customers and finds that the average monthly cell expense was $90 with a standard deviation of $14.

Based on the above sample data, is there enough evidence to conclude that the cell phone expense is greater than $80? Test the hypothesis at the 5% level of significance.

**HYPOTHES**

What are the null and alternative hypotheses?

Enter the LETTER of the correct answer

A. H0: μ = $80; HA: μ ≠ $80

B. H0: μ = $80; HA: μ < $80 (μ is less than $80)

C. H0: μ = $80; HA: μ > $80 (μ is more than $80)

D. H0: μ = $90; HA: μ ≠ $90

E. H0: μ = $90; HA: μ > $90 (μ is more than $90)

F. H0: μ = $90; HA: μ < $90 (μ is less than $90)

ANSWER: [C, c]

**HYPOTHESIS TEST**

Critical Value (*3 decimal places*): [1.678]

Decision Rule: [Reject if T-test > 1.678]

Test Statistic (*3 decimal places*): : [4.949]

**DECISION AND CONCLUSION**

Decision: [Reject H\_0]

Conclusion. Enter the LETTER of the correct answer

A. Yes, there is enough evidence to conclude that the average cell phone bill is higher than Koodo claims.

B. No, there is not enough evidence to conclude the average conclude the average cell phone bill is higher than Koodo claims.

ANSWER: [A, a]

Type: FMB

Points: 12

15. SaskTel claims that the average cell phone expense for a SaskTel customer is $97 per month. Nathan feels that average monthly cell phone expenses are higher than $97 per month. Olivia conducts a random sample of 46 SaskTel customers and finds that the average monthly cell expense was $101 with a standard deviation of $20.

Based on the above sample data, is there enough evidence to conclude that the cell phone expense is greater than $97? Test the hypothesis at the 5% level of significance.

**HYPOTHES**

What are the null and alternative hypotheses?

Enter the LETTER of the correct answer

A. H0: μ = $97; HA: μ ≠ $97

B. H0: μ = $97; HA: μ < $97 (μ is less than $97)

C. H0: μ = $97; HA: μ > $97 (μ is more than $97)

D. H0: μ = $101; HA: μ ≠ $101

E. H0: μ = $101; HA: μ > $101 (μ is more than $101)

F. H0: μ = $101; HA: μ < $101 (μ is less than $101)

ANSWER: [C, c]

**HYPOTHESIS TEST**

Critical Value (*3 decimal places*): [1.679]

Decision Rule: [Reject if T-test > 1.679]

Test Statistic (*3 decimal places*): : [1.356]

**DECISION AND CONCLUSION**

Decision: [Fail to Reject]

Conclusion. Enter the LETTER of the correct answer

A. Yes, there is enough evidence to conclude that the average cell phone bill is higher than SaskTel claims.

B. No, there is not enough evidence to conclude the average conclude the average cell phone bill is higher than SaskTel claims.

ANSWER: [B, b]

Type: FMB

Points: 12

16. Fizz claims that the average cell phone expense for a Fizz customer is $66 per month. Ibrahim feels that average monthly cell phone expenses are higher than $66 per month. Olivia conducts a random sample of 49 Fizz customers and finds that the average monthly cell expense was $79 with a standard deviation of $13.

Based on the above sample data, is there enough evidence to conclude that the cell phone expense is greater than $66? Test the hypothesis at the 10% level of significance.

**HYPOTHES**

What are the null and alternative hypotheses?

Enter the LETTER of the correct answer

A. H0: μ = $66; HA: μ ≠ $66

B. H0: μ = $66; HA: μ < $66 (μ is less than $66)

C. H0: μ = $66; HA: μ > $66 (μ is more than $66)

D. H0: μ = $79; HA: μ ≠ $79

E. H0: μ = $79; HA: μ > $79 (μ is more than $79)

F. H0: μ = $79; HA: μ < $79 (μ is less than $79)

ANSWER: [C, c]

**HYPOTHESIS TEST**

Critical Value (*3 decimal places*): [1.299]

Decision Rule: [Reject if T-test > 1.299]

Test Statistic (*3 decimal places*): : [7.]

**DECISION AND CONCLUSION**

Decision: [Reject H\_0]

Conclusion. Enter the LETTER of the correct answer

A. Yes, there is enough evidence to conclude that the average cell phone bill is higher than Fizz claims.

B. No, there is not enough evidence to conclude the average conclude the average cell phone bill is higher than Fizz claims.

ANSWER: [A, a]

Type: FMB

Points: 12

17. Freedom claims that the average cell phone expense for a Freedom customer is $97 per month. Hunter feels that average monthly cell phone expenses are higher than $97 per month. Olivia conducts a random sample of 40 Freedom customers and finds that the average monthly cell expense was $107 with a standard deviation of $19.

Based on the above sample data, is there enough evidence to conclude that the cell phone expense is greater than $97? Test the hypothesis at the 5% level of significance.

**HYPOTHES**

What are the null and alternative hypotheses?

Enter the LETTER of the correct answer

A. H0: μ = $97; HA: μ ≠ $97

B. H0: μ = $97; HA: μ < $97 (μ is less than $97)

C. H0: μ = $97; HA: μ > $97 (μ is more than $97)

D. H0: μ = $107; HA: μ ≠ $107

E. H0: μ = $107; HA: μ > $107 (μ is more than $107)

F. H0: μ = $107; HA: μ < $107 (μ is less than $107)

ANSWER: [C, c]

**HYPOTHESIS TEST**

Critical Value (*3 decimal places*): [1.685]

Decision Rule: [Reject if T-test > 1.685]

Test Statistic (*3 decimal places*): : [3.329]

**DECISION AND CONCLUSION**

Decision: [Reject H\_0]

Conclusion. Enter the LETTER of the correct answer

A. Yes, there is enough evidence to conclude that the average cell phone bill is higher than Freedom claims.

B. No, there is not enough evidence to conclude the average conclude the average cell phone bill is higher than Freedom claims.

ANSWER: [A, a]

Type: FMB

Points: 12

18. Bell claims that the average cell phone expense for a Bell customer is $75 per month. Ava feels that average monthly cell phone expenses are higher than $75 per month. Olivia conducts a random sample of 35 Bell customers and finds that the average monthly cell expense was $83 with a standard deviation of $21.

Based on the above sample data, is there enough evidence to conclude that the cell phone expense is greater than $75? Test the hypothesis at the 2% level of significance.

**HYPOTHES**

What are the null and alternative hypotheses?

Enter the LETTER of the correct answer

A. H0: μ = $75; HA: μ ≠ $75

B. H0: μ = $75; HA: μ < $75 (μ is less than $75)

C. H0: μ = $75; HA: μ > $75 (μ is more than $75)

D. H0: μ = $83; HA: μ ≠ $83

E. H0: μ = $83; HA: μ > $83 (μ is more than $83)

F. H0: μ = $83; HA: μ < $83 (μ is less than $83)

ANSWER: [C, c]

**HYPOTHESIS TEST**

Critical Value (*3 decimal places*): [2.136]

Decision Rule: [Reject if T-test > 2.136]

Test Statistic (*3 decimal places*): : [2.254]

**DECISION AND CONCLUSION**

Decision: [Reject H\_0]

Conclusion. Enter the LETTER of the correct answer

A. Yes, there is enough evidence to conclude that the average cell phone bill is higher than Bell claims.

B. No, there is not enough evidence to conclude the average conclude the average cell phone bill is higher than Bell claims.

ANSWER: [A, a]

Type: FMB

Points: 12

19. Rogers claims that the average cell phone expense for a Rogers customer is $84 per month. Ivana feels that average monthly cell phone expenses are higher than $84 per month. Olivia conducts a random sample of 46 Rogers customers and finds that the average monthly cell expense was $98 with a standard deviation of $12.

Based on the above sample data, is there enough evidence to conclude that the cell phone expense is greater than $84? Test the hypothesis at the 1% level of significance.

**HYPOTHES**

What are the null and alternative hypotheses?

Enter the LETTER of the correct answer

A. H0: μ = $84; HA: μ ≠ $84

B. H0: μ = $84; HA: μ < $84 (μ is less than $84)

C. H0: μ = $84; HA: μ > $84 (μ is more than $84)

D. H0: μ = $98; HA: μ ≠ $98

E. H0: μ = $98; HA: μ > $98 (μ is more than $98)

F. H0: μ = $98; HA: μ < $98 (μ is less than $98)

ANSWER: [C, c]

**HYPOTHESIS TEST**

Critical Value (*3 decimal places*): [2.412]

Decision Rule: [Reject if T-test > 2.412]

Test Statistic (*3 decimal places*): : [7.913]

**DECISION AND CONCLUSION**

Decision: [Reject H\_0]

Conclusion. Enter the LETTER of the correct answer

A. Yes, there is enough evidence to conclude that the average cell phone bill is higher than Rogers claims.

B. No, there is not enough evidence to conclude the average conclude the average cell phone bill is higher than Rogers claims.

ANSWER: [A, a]

Type: FMB

Points: 12

20. Freedom claims that the average cell phone expense for a Freedom customer is $67 per month. Ivana feels that average monthly cell phone expenses are higher than $67 per month. Olivia conducts a random sample of 37 Freedom customers and finds that the average monthly cell expense was $81 with a standard deviation of $14.

Based on the above sample data, is there enough evidence to conclude that the cell phone expense is greater than $67? Test the hypothesis at the 5% level of significance.

**HYPOTHES**

What are the null and alternative hypotheses?

Enter the LETTER of the correct answer

A. H0: μ = $67; HA: μ ≠ $67

B. H0: μ = $67; HA: μ < $67 (μ is less than $67)

C. H0: μ = $67; HA: μ > $67 (μ is more than $67)

D. H0: μ = $81; HA: μ ≠ $81

E. H0: μ = $81; HA: μ > $81 (μ is more than $81)

F. H0: μ = $81; HA: μ < $81 (μ is less than $81)

ANSWER: [C, c]

**HYPOTHESIS TEST**

Critical Value (*3 decimal places*): [1.688]

Decision Rule: [Reject if T-test > 1.688]

Test Statistic (*3 decimal places*): : [6.083]

**DECISION AND CONCLUSION**

Decision: [Reject H\_0]

Conclusion. Enter the LETTER of the correct answer

A. Yes, there is enough evidence to conclude that the average cell phone bill is higher than Freedom claims.

B. No, there is not enough evidence to conclude the average conclude the average cell phone bill is higher than Freedom claims.

ANSWER: [A, a]

Type: FMB

Points: 12

21. Solo claims that the average cell phone expense for a Solo customer is $70 per month. Jagmit feels that average monthly cell phone expenses are higher than $70 per month. Olivia conducts a random sample of 31 Solo customers and finds that the average monthly cell expense was $77 with a standard deviation of $20.

Based on the above sample data, is there enough evidence to conclude that the cell phone expense is greater than $70? Test the hypothesis at the 1% level of significance.

**HYPOTHES**

What are the null and alternative hypotheses?

Enter the LETTER of the correct answer

A. H0: μ = $70; HA: μ ≠ $70

B. H0: μ = $70; HA: μ < $70 (μ is less than $70)

C. H0: μ = $70; HA: μ > $70 (μ is more than $70)

D. H0: μ = $77; HA: μ ≠ $77

E. H0: μ = $77; HA: μ > $77 (μ is more than $77)

F. H0: μ = $77; HA: μ < $77 (μ is less than $77)

ANSWER: [C, c]

**HYPOTHESIS TEST**

Critical Value (*3 decimal places*): [2.457]

Decision Rule: [Reject if T-test > 2.457]

Test Statistic (*3 decimal places*): : [1.949]

**DECISION AND CONCLUSION**

Decision: [Fail to Reject]

Conclusion. Enter the LETTER of the correct answer

A. Yes, there is enough evidence to conclude that the average cell phone bill is higher than Solo claims.

B. No, there is not enough evidence to conclude the average conclude the average cell phone bill is higher than Solo claims.

ANSWER: [B, b]

Type: FMB

Points: 12

22. Freedom claims that the average cell phone expense for a Freedom customer is $85 per month. Ryan feels that average monthly cell phone expenses are higher than $85 per month. Olivia conducts a random sample of 43 Freedom customers and finds that the average monthly cell expense was $87 with a standard deviation of $18.

Based on the above sample data, is there enough evidence to conclude that the cell phone expense is greater than $85? Test the hypothesis at the 1% level of significance.

**HYPOTHES**

What are the null and alternative hypotheses?

Enter the LETTER of the correct answer

A. H0: μ = $85; HA: μ ≠ $85

B. H0: μ = $85; HA: μ < $85 (μ is less than $85)

C. H0: μ = $85; HA: μ > $85 (μ is more than $85)

D. H0: μ = $87; HA: μ ≠ $87

E. H0: μ = $87; HA: μ > $87 (μ is more than $87)

F. H0: μ = $87; HA: μ < $87 (μ is less than $87)

ANSWER: [C, c]

**HYPOTHESIS TEST**

Critical Value (*3 decimal places*): [2.418]

Decision Rule: [Reject if T-test > 2.418]

Test Statistic (*3 decimal places*): : [.729]

**DECISION AND CONCLUSION**

Decision: [Fail to Reject]

Conclusion. Enter the LETTER of the correct answer

A. Yes, there is enough evidence to conclude that the average cell phone bill is higher than Freedom claims.

B. No, there is not enough evidence to conclude the average conclude the average cell phone bill is higher than Freedom claims.

ANSWER: [B, b]

Type: FMB

Points: 12

23. Fizz claims that the average cell phone expense for a Fizz customer is $95 per month. Manvir feels that average monthly cell phone expenses are higher than $95 per month. Olivia conducts a random sample of 45 Fizz customers and finds that the average monthly cell expense was $100 with a standard deviation of $16.

Based on the above sample data, is there enough evidence to conclude that the cell phone expense is greater than $95? Test the hypothesis at the 2% level of significance.

**HYPOTHES**

What are the null and alternative hypotheses?

Enter the LETTER of the correct answer

A. H0: μ = $95; HA: μ ≠ $95

B. H0: μ = $95; HA: μ < $95 (μ is less than $95)

C. H0: μ = $95; HA: μ > $95 (μ is more than $95)

D. H0: μ = $100; HA: μ ≠ $100

E. H0: μ = $100; HA: μ > $100 (μ is more than $100)

F. H0: μ = $100; HA: μ < $100 (μ is less than $100)

ANSWER: [C, c]

**HYPOTHESIS TEST**

Critical Value (*3 decimal places*): [2.116]

Decision Rule: [Reject if T-test > 2.116]

Test Statistic (*3 decimal places*): : [2.096]

**DECISION AND CONCLUSION**

Decision: [Fail to Reject]

Conclusion. Enter the LETTER of the correct answer

A. Yes, there is enough evidence to conclude that the average cell phone bill is higher than Fizz claims.

B. No, there is not enough evidence to conclude the average conclude the average cell phone bill is higher than Fizz claims.

ANSWER: [B, b]

Type: FMB

Points: 12

24. Bell claims that the average cell phone expense for a Bell customer is $82 per month. Ivana feels that average monthly cell phone expenses are higher than $82 per month. Olivia conducts a random sample of 40 Bell customers and finds that the average monthly cell expense was $86 with a standard deviation of $22.

Based on the above sample data, is there enough evidence to conclude that the cell phone expense is greater than $82? Test the hypothesis at the 5% level of significance.

**HYPOTHES**

What are the null and alternative hypotheses?

Enter the LETTER of the correct answer

A. H0: μ = $82; HA: μ ≠ $82

B. H0: μ = $82; HA: μ < $82 (μ is less than $82)

C. H0: μ = $82; HA: μ > $82 (μ is more than $82)

D. H0: μ = $86; HA: μ ≠ $86

E. H0: μ = $86; HA: μ > $86 (μ is more than $86)

F. H0: μ = $86; HA: μ < $86 (μ is less than $86)

ANSWER: [C, c]

**HYPOTHESIS TEST**

Critical Value (*3 decimal places*): [1.685]

Decision Rule: [Reject if T-test > 1.685]

Test Statistic (*3 decimal places*): : [1.15]

**DECISION AND CONCLUSION**

Decision: [Fail to Reject]

Conclusion. Enter the LETTER of the correct answer

A. Yes, there is enough evidence to conclude that the average cell phone bill is higher than Bell claims.

B. No, there is not enough evidence to conclude the average conclude the average cell phone bill is higher than Bell claims.

ANSWER: [B, b]

Type: FMB

Points: 12

25. Virgin Mobile claims that the average cell phone expense for a Virgin Mobile customer is $69 per month. Joaquin feels that average monthly cell phone expenses are higher than $69 per month. Olivia conducts a random sample of 40 Virgin Mobile customers and finds that the average monthly cell expense was $83 with a standard deviation of $22.

Based on the above sample data, is there enough evidence to conclude that the cell phone expense is greater than $69? Test the hypothesis at the 10% level of significance.

**HYPOTHES**

What are the null and alternative hypotheses?

Enter the LETTER of the correct answer

A. H0: μ = $69; HA: μ ≠ $69

B. H0: μ = $69; HA: μ < $69 (μ is less than $69)

C. H0: μ = $69; HA: μ > $69 (μ is more than $69)

D. H0: μ = $83; HA: μ ≠ $83

E. H0: μ = $83; HA: μ > $83 (μ is more than $83)

F. H0: μ = $83; HA: μ < $83 (μ is less than $83)

ANSWER: [C, c]

**HYPOTHESIS TEST**

Critical Value (*3 decimal places*): [1.304]

Decision Rule: [Reject if T-test > 1.304]

Test Statistic (*3 decimal places*): : [4.025]

**DECISION AND CONCLUSION**

Decision: [Reject H\_0]

Conclusion. Enter the LETTER of the correct answer

A. Yes, there is enough evidence to conclude that the average cell phone bill is higher than Virgin Mobile claims.

B. No, there is not enough evidence to conclude the average conclude the average cell phone bill is higher than Virgin Mobile claims.

ANSWER: [A, a]

Type: FMB

Points: 12

26. Solo claims that the average cell phone expense for a Solo customer is $75 per month. Ava feels that average monthly cell phone expenses are higher than $75 per month. Olivia conducts a random sample of 33 Solo customers and finds that the average monthly cell expense was $80 with a standard deviation of $24.

Based on the above sample data, is there enough evidence to conclude that the cell phone expense is greater than $75? Test the hypothesis at the 2% level of significance.

**HYPOTHES**

What are the null and alternative hypotheses?

Enter the LETTER of the correct answer

A. H0: μ = $75; HA: μ ≠ $75

B. H0: μ = $75; HA: μ < $75 (μ is less than $75)

C. H0: μ = $75; HA: μ > $75 (μ is more than $75)

D. H0: μ = $80; HA: μ ≠ $80

E. H0: μ = $80; HA: μ > $80 (μ is more than $80)

F. H0: μ = $80; HA: μ < $80 (μ is less than $80)

ANSWER: [C, c]

**HYPOTHESIS TEST**

Critical Value (*3 decimal places*): [2.141]

Decision Rule: [Reject if T-test > 2.141]

Test Statistic (*3 decimal places*): : [1.197]

**DECISION AND CONCLUSION**

Decision: [Fail to Reject]

Conclusion. Enter the LETTER of the correct answer

A. Yes, there is enough evidence to conclude that the average cell phone bill is higher than Solo claims.

B. No, there is not enough evidence to conclude the average conclude the average cell phone bill is higher than Solo claims.

ANSWER: [B, b]

Type: FMB

Points: 12

27. Primus claims that the average cell phone expense for a Primus customer is $73 per month. Ava feels that average monthly cell phone expenses are higher than $73 per month. Olivia conducts a random sample of 44 Primus customers and finds that the average monthly cell expense was $88 with a standard deviation of $10.

Based on the above sample data, is there enough evidence to conclude that the cell phone expense is greater than $73? Test the hypothesis at the 10% level of significance.

**HYPOTHES**

What are the null and alternative hypotheses?

Enter the LETTER of the correct answer

A. H0: μ = $73; HA: μ ≠ $73

B. H0: μ = $73; HA: μ < $73 (μ is less than $73)

C. H0: μ = $73; HA: μ > $73 (μ is more than $73)

D. H0: μ = $88; HA: μ ≠ $88

E. H0: μ = $88; HA: μ > $88 (μ is more than $88)

F. H0: μ = $88; HA: μ < $88 (μ is less than $88)

ANSWER: [C, c]

**HYPOTHESIS TEST**

Critical Value (*3 decimal places*): [1.302]

Decision Rule: [Reject if T-test > 1.302]

Test Statistic (*3 decimal places*): : [9.95]

**DECISION AND CONCLUSION**

Decision: [Reject H\_0]

Conclusion. Enter the LETTER of the correct answer

A. Yes, there is enough evidence to conclude that the average cell phone bill is higher than Primus claims.

B. No, there is not enough evidence to conclude the average conclude the average cell phone bill is higher than Primus claims.

ANSWER: [A, a]

Type: FMB

Points: 12

28. Freedom claims that the average cell phone expense for a Freedom customer is $94 per month. James feels that average monthly cell phone expenses are higher than $94 per month. Olivia conducts a random sample of 48 Freedom customers and finds that the average monthly cell expense was $98 with a standard deviation of $16.

Based on the above sample data, is there enough evidence to conclude that the cell phone expense is greater than $94? Test the hypothesis at the 2% level of significance.

**HYPOTHES**

What are the null and alternative hypotheses?

Enter the LETTER of the correct answer

A. H0: μ = $94; HA: μ ≠ $94

B. H0: μ = $94; HA: μ < $94 (μ is less than $94)

C. H0: μ = $94; HA: μ > $94 (μ is more than $94)

D. H0: μ = $98; HA: μ ≠ $98

E. H0: μ = $98; HA: μ > $98 (μ is more than $98)

F. H0: μ = $98; HA: μ < $98 (μ is less than $98)

ANSWER: [C, c]

**HYPOTHESIS TEST**

Critical Value (*3 decimal places*): [2.112]

Decision Rule: [Reject if T-test > 2.112]

Test Statistic (*3 decimal places*): : [1.732]

**DECISION AND CONCLUSION**

Decision: [Fail to Reject]

Conclusion. Enter the LETTER of the correct answer

A. Yes, there is enough evidence to conclude that the average cell phone bill is higher than Freedom claims.

B. No, there is not enough evidence to conclude the average conclude the average cell phone bill is higher than Freedom claims.

ANSWER: [B, b]

Type: FMB

Points: 12

29. Freedom claims that the average cell phone expense for a Freedom customer is $87 per month. Sophia feels that average monthly cell phone expenses are higher than $87 per month. Olivia conducts a random sample of 35 Freedom customers and finds that the average monthly cell expense was $90 with a standard deviation of $19.

Based on the above sample data, is there enough evidence to conclude that the cell phone expense is greater than $87? Test the hypothesis at the 1% level of significance.

**HYPOTHES**

What are the null and alternative hypotheses?

Enter the LETTER of the correct answer

A. H0: μ = $87; HA: μ ≠ $87

B. H0: μ = $87; HA: μ < $87 (μ is less than $87)

C. H0: μ = $87; HA: μ > $87 (μ is more than $87)

D. H0: μ = $90; HA: μ ≠ $90

E. H0: μ = $90; HA: μ > $90 (μ is more than $90)

F. H0: μ = $90; HA: μ < $90 (μ is less than $90)

ANSWER: [C, c]

**HYPOTHESIS TEST**

Critical Value (*3 decimal places*): [2.441]

Decision Rule: [Reject if T-test > 2.441]

Test Statistic (*3 decimal places*): : [.934]

**DECISION AND CONCLUSION**

Decision: [Fail to Reject]

Conclusion. Enter the LETTER of the correct answer

A. Yes, there is enough evidence to conclude that the average cell phone bill is higher than Freedom claims.

B. No, there is not enough evidence to conclude the average conclude the average cell phone bill is higher than Freedom claims.

ANSWER: [B, b]

Type: FMB

Points: 12

30. Koodo claims that the average cell phone expense for a Koodo customer is $67 per month. Tiago feels that average monthly cell phone expenses are higher than $67 per month. Olivia conducts a random sample of 37 Koodo customers and finds that the average monthly cell expense was $78 with a standard deviation of $19.

Based on the above sample data, is there enough evidence to conclude that the cell phone expense is greater than $67? Test the hypothesis at the 2% level of significance.

**HYPOTHES**

What are the null and alternative hypotheses?

Enter the LETTER of the correct answer

A. H0: μ = $67; HA: μ ≠ $67

B. H0: μ = $67; HA: μ < $67 (μ is less than $67)

C. H0: μ = $67; HA: μ > $67 (μ is more than $67)

D. H0: μ = $78; HA: μ ≠ $78

E. H0: μ = $78; HA: μ > $78 (μ is more than $78)

F. H0: μ = $78; HA: μ < $78 (μ is less than $78)

ANSWER: [C, c]

**HYPOTHESIS TEST**

Critical Value (*3 decimal places*): [2.131]

Decision Rule: [Reject if T-test > 2.131]

Test Statistic (*3 decimal places*): : [3.522]

**DECISION AND CONCLUSION**

Decision: [Reject H\_0]

Conclusion. Enter the LETTER of the correct answer

A. Yes, there is enough evidence to conclude that the average cell phone bill is higher than Koodo claims.

B. No, there is not enough evidence to conclude the average conclude the average cell phone bill is higher than Koodo claims.

ANSWER: [A, a]