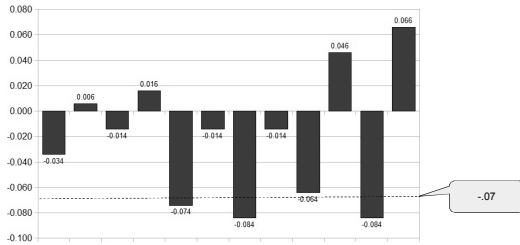




# UME

Unreasonable Minus Error

Minus errors that exceed the Maximum Allowed Variation.



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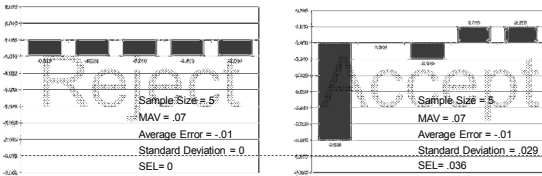
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# SEL

Sample Error Limit

A statistical value that allows for the uncertainty between the sample average error and the inspection lot average error. The Sample Error Limit or SEL is determined by multiplying the lot's sample standard deviation by a correction factor that takes into consideration the lot size.



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# Random Pack

A collection of packages of a commodity with identical labels, except for the net weight. For example, bricks of cheese labeled: Extra Sharp Cheddar, Audrey Cheese Company, Sell by April 1 '96, each having a different labeled net weight ranging from 0.94 lb to 1.64 lb.

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# Standard Pack

A collection of packages of a commodity with identical labels, all with the same net weight. For example, bricks of cheese labeled: Extra Sharp Cheddar, Audrey Cheese Company, Sell by April 1'96, Net Weight 1 lb, 454 grams.

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# Tare

## Wet Tare

Material which has not been dried or cleaned. Wet tare includes any substances absorbed by the packaging material, free-flowing liquids, and any ice or ice glaze except when the product is ice.

## Dry Tare

New tare material that has never been used in the packaging of a commodity or Used tare material dried in order to approximate new material.

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# MLA

## Moisture Loss Allowance

A moisture loss allowance is a given percentage where shortages within that percentage may have been caused by unavoidable moisture lost in good distribution. Wet tare is used for testing commodities with a MLA greater than 0%.

|    |  |
|----|--|
| 3% | Flour  |
| 3% | Dry Pet Food   |
| 1% | Fresh baked breads, buns, rolls, and muffins when tested after the end of the packing day.   |
| 1% | Frozen fruits and vegetables when tested seven or more days after the end of the packing day.  |
| 3% | Bakery products other than fresh breads, buns, rolls, and muffins when tested after the end of the packing day.  |
| 3% | Fresh or dried fruits and vegetables, cheese and cheese products, pasta, rice, and coffee beans when tested seven or more days after the end of the packing day. |

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# Examples

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# Standard Packages

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Date, Time & County  
 Report/OSO #  
 Commodity Number  
 Names & Addresses  
 Responsible Party/Inspected At

QC Manual  
 pp. 17-1 to 17-3

| PACKAGE INSPECTION REPORT                |              |                 |          |  |                                     |
|--|--------------|-----------------|----------|--|-------------------------------------|
| CATEGORY                                 | Date         | Time            | COUNTY   | Report # or Off Sale Order #           | Commodity Number                    |
| A  | 7-20-11      | 1130            | Big Bear | 00-12345                               | 301                                 |
| CHECK PARTY RESPONSIBLE FOR NET CONTENTS |              |                 |          |  |                                     |
| <input checked="" type="checkbox"/>      | Packer       | Bag o' Buns Co. |          | Address 125 Broad St. Silver Pt. 14605 |                                     |
|  | Distributor: |                 |          | Address                                |                                     |
|  | Dealer       | Dave's Market   |          | Address 601 Main St. Arroyo Ca. 60006  |                                     |
|  |              |                 |          |  | <input checked="" type="checkbox"/> |

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Brand Name  
Date Code & Other Code  
Commodity & Container Description  
Price  
Group  
Device Divisions  
Inspection Lot Size  
Sample Size, Tare Sample Size & UME Allowed

|            |                     |                             |                         |                            |                        |
|------------|---------------------|-----------------------------|-------------------------|----------------------------|------------------------|
| Brand Name | <b>Bag o' Buns</b>  | Other Identification / Code | <b>7-20-11</b>          | Other Code                 | <b>upc 01234567890</b> |
| Commodity  | <b>dinner rolls</b> | Container Description       | <b>plastic bag w/4e</b> |                            |                        |
| \$         | <b>1.99</b>         | Package Form                | Group                   | M.A.                       | Other                  |
|            |                     |                             |                         |                            | <b>0</b>               |
|            |                     | Device Division             | <b>.0016</b>            | Inspection Lot Size        | <b>21</b>              |
|            |                     | Sample Size                 | <b>12</b>               | Tare Sample Size (initial) | <b>2</b>               |
|            |                     | UMEs Allowed                | <b>0</b>                |                            |                        |

Standard Pack = Package  
Random Pack = Pound

QC Manual Table 2-1

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Labeled Weight  
Initial Sample #1  
Initial Sample #2  
Calculate Errors

| (1) Labeled Content or Net Weight (Range) (lb) | (2) Gross Weight (lb) | (3) Tare Weight (lb) | (4) Net Weight (lb) | (5) Error (lb) | (6) Net Weight (lb) (Range) (lb) | (7) Error (lb) (Range) (lb) | (8) Net Weight (lb) (Range) (lb) | (9) Error (lb) (Range) (lb) | (10) M.A. (Range) (lb) | (11) Adjusted Net Weight (lb) |
|--|-----------------------|----------------------|---------------------|----------------|----------------------------------|-----------------------------|----------------------------------|-----------------------------|------------------------|-------------------------------|
| <b>2.000</b>                                   | <b>2.060</b>          | <b>.110</b>          | <b>1.970</b>        | <b>-0.030</b>  |                                  |                             |                                  |                             |                        |                               |
|  | <b>2.120</b>          | <b>.120</b>          | <b>2.000</b>        | <b>0.000</b>   |                                  |                             |                                  |                             |                        |                               |
|  |                       |                      |                     |                |                                  |                             |                                  |                             |                        |                               |

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Range of Errors  
Range of Tare Weights  
Ratio  
Total Number of Packages to be Opened

|                        |                               |  |  |
|------------------------|-------------------------------|--|--|
| (10) M.A. (Range) (lb) | (11) Adjusted Net Weight (lb) | (12) Ratio of Net Weight (lb) (Range) (lb) | (13) Total Number of Packages to be Opened |
| <b>.03</b>             | <b>.01</b>                    | <b>.1</b>                                  | <b>8</b>                                   |

0.030 - 0.000

.120 - .110

QC Manual Table 2-3

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Remaining Sample Data  
Nominal Gross Weight  
Calculate Errors  
MAV  
UME

Average Tare Weight + Labeled Weight

QC Manual Table 2-5

| (1) Labeled Content or Random Average Weight (MA) | (2) Gross Weight     | (3) Tare Weight | (4) Net Weight (4 = 2 - 3) | (5) Error From Sample Weight (5 = 4 - 1) | (6) Number Gross Weight (6 = 2/5) | (7) Average Error (7 = 5/6) (Plus (+) or Minus (-)) | (8) MAV Item Tare | (9) M.L.A. Label Content | (10) Adjusted MAV (10 = 7 + 9) |
|---|----------------------|-----------------|----------------------------|--|-----------------------------------|---|-------------------|--------------------------|--------------------------------|
| 2.000   |                      |                 |                            |  |                                   |   | 0.70              |                          |                                |
| 1. 2.080  | 1.10                 | 1.770           | -0.090                     | 2.14                                     |                                   | -0.04   |                   |                          |                                |
| 2. 2.120  | 1.20                 | 2.000           | 0.000                      |  |                                   |   | 0.06              |                          |                                |
| 3. 2.100  | 1.20                 |                 |                            |  |                                   | -0.04   |                   |                          |                                |
| 4. 2.130  | 1.00                 |                 |                            |  |                                   |   | 0.16              |                          |                                |
| 5. 2.040  | 1.10                 |                 |                            |  |                                   | -0.04   |                   |                          |                                |
| 6. 2.100  | 1.20                 |                 |                            |  |                                   | -0.04   |                   |                          |                                |
| 7. 2.030  | 1.10                 |                 |                            |  |                                   | -0.04   |                   |                          |                                |
| 8. 2.100  | 1.20                 |                 |                            |  |                                   | -0.04   |                   |                          |                                |
| 9. 2.050  |                      |                 |                            |  |                                   | -0.04   |                   |                          |                                |
| 10. 2.160   |                      |                 |                            |  |                                   |   | 0.16              |                          |                                |
| 11. 2.080   |                      |                 |                            |  |                                   | -0.04   |                   |                          |                                |
| 12. 2.150   |                      |                 |                            |  |                                   |   | 0.16              |                          |                                |
| Total   | Total of 12m Weights | 9.10            |                            | Error Total for Each Column              |                                   | -0.382  | 1.34              |                          |                                |

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Average Tare Weight  
Total Error  
Number of UME's  
Reject?  
Average Error

3 > 0?

|   |                                  |                                  |  |  |   |
|---|----------------------------------|----------------------------------|--|--|---|
| (15) Average Tare Weight<br><b>1.14</b> | (16) Total Error<br><b>-2.48</b> | (17) Number of UME's<br><b>3</b> | (18) [17] is [18] greater than [16]?<br>YES: REJECT <input checked="" type="checkbox"/><br>NO: Continue <input type="checkbox"/> | (19) Average Error: (19 = 7/3)<br><b>-0.82</b> | (20) Is [19] Zero or Plus?<br>YES: ACCEPT LOT <input type="checkbox"/><br>NO: Go to [21] <input type="checkbox"/> |
|---|----------------------------------|----------------------------------|--|--|---|

-0.382 + .134

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## Lot Rejected for UME

|   |   |  |
|---|---|--|
| (21) Computed Standard Deviation of Sample Errors | (22) Sample Correction Factor (Table 2-1, Col. 2) | (23) Sample Error Limit (SEL) (23 = [21] x [22]) |
|---|---|--|

**[24] AVERAGE ERROR [19] IS MINUS** (Use the absolute value of [19] for these determinations)

M.L.A.  Moisture Loss Allowance is greater than 0% \_\_\_\_\_ %

Is \_\_\_\_\_ [18] less than or equal to \_\_\_\_\_ [23] IF YES, ACCEPT

Is \_\_\_\_\_ [18] greater than \_\_\_\_\_ [23] + [4A] IF YES, REJECT

Is \_\_\_\_\_ [18] greater than \_\_\_\_\_ [23] IF YES, COMMUNITY

AND less than or equal to \_\_\_\_\_ [23] + [4A] IN THE GREY AREA, STATE NOT DETERMINED.

OTHER  No Moisture Loss Allowance OR  Moisture Loss Allowance equals 0%

Is \_\_\_\_\_ [18] less than or equal to \_\_\_\_\_ [23] IF YES, ACCEPT

Is \_\_\_\_\_ [18] greater than \_\_\_\_\_ [23] IF YES, REJECT

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Date, Time & County  
 Report/OSO #  
 Commodity Number  
 Names & Addresses  
 Responsible Party/Inspected At

QC Manual  
 pp. 17-1 to 17-3

| PACKAGE INSPECTION REPORT                |         |      |               |                              |                               |
|--|---------|------|---------------|------------------------------|-------------------------------|
| CATEGORY                                 | Date    | Time | COUNTY        | Report # or Off Sale Order # | Commodity Number              |
| A  | 7-20-11 | 110  | Big Bear      | 00-12345                     | 405                           |
| CHECK PARTY RESPONSIBLE FOR NET CONTENTS |         |      |               |                              |                               |
| Packer                                   |         |      | Address       |                              |                               |
| Distributor                              |         |      | Address       |                              |                               |
| <input checked="" type="checkbox"/>      | Dealer  |      | Dave's Market |                              | 601 Main St. Arroyo Ca. 90006 |
|  |         |      | INSPECTED AT  |                              |                               |

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Brand Name  
 Date Code & Other Code  
 Commodity & Container Description  
 Price  
 Group  
 Device Divisions  
 Inspection Lot Size  
 Sample Size, Tare Sample Size & UME Allowed

| Brand Name  | Other Identification / Date Code  | Other Code   |
|---|---|--|
| Dave's Market   | 7-20-11   | Upc 12345678901  |
| Commodity   | Container Description   |  |
| ground chuck  | foam beat w/wrap  |  |
| <input checked="" type="checkbox"/> Standard Pack = Package<br><input type="checkbox"/> Random Pack = Pound | <input type="checkbox"/> Package<br><input type="checkbox"/> Pound<br><input type="checkbox"/> Group<br><input type="checkbox"/> M.A.<br><input type="checkbox"/> Other | <input type="checkbox"/> %<br><input type="checkbox"/> Device<br><input type="checkbox"/> Division |
| 1.99  | 0016  | 5  |
| 5   | 5   | 2  |
| 0   | 0   | 0  |

QC Manual Table 2-1

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Labeled Weight  
 Initial Sample #1  
 Initial Sample #2  
 Calculate Errors

| (1) Labeled Content or Random Average Weight (kg) | (2) Gross Weight (kg) | (3) Net Weight (kg) | (4) Net Weight (kg) | (5) Error (kg) | (6) Net Weight (kg) | (7) Net Weight (kg) | (8) Net Weight (kg) | (9) Net Weight (kg) | (10) Net Weight (kg) | (11) Net Weight (kg) | (12) Net Weight (kg) |
|---|-----------------------|---------------------|---------------------|----------------|---------------------|---------------------|---------------------|---------------------|----------------------|----------------------|----------------------|
| 1.070   | 1.120                 | 0.970               | 1.080               | -0.010         |                     |                     |                     |                     |                      |                      |                      |
| 1.190   | 1.210                 | 0.970               | 1.170               | -0.020         |                     |                     |                     |                     |                      |                      |                      |
|   |                       |                     |                     |                |                     |                     |                     |                     |                      |                      |                      |

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If the Sample Size is 11 or less, both the initial tare sample size and the total tare sample size is 2.  
There is no need to compute Rc/Rt or to take additional tare samples.

| (10) No. - Range of Errors (2) | (11) No. - Range of Tare Weights (3) | (12) Range of Rc/Rt (4) (5 / (10)) | (13) Total Number of Tare (Tables 2-3) |
|--------------------------------|--------------------------------------|------------------------------------|--|
|                                |                                      |                                    |  |

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Remaining Sample Data

Calculate Errors

MAV

UME = 0

QC Manual Table 2-5

| (1) Label Control or Vendor-Design Weight (g) | (2) Gross Weight (g)  | (3) Tare Weight (g) | (4) Net Weight (g) (2 - 3) | (5) Error Total for Sample (g) (4 - 1) | (6) Number Gross Weights (2 + 3) | (7) Package Error Balance (2 - 1) / Package (2 - 1) - (1) | (8) MAV Item Tare | (9) MCA (10) M Label Content | (11) Adjusted MAV (2 - 1) |
|---|-----------------------|---------------------|----------------------------|--|----------------------------------|---|-------------------|------------------------------|---------------------------|
| 1142  |                       |                     |                            |  |                                  |   |                   |                              |                           |
| 1. 1090                                       | 1120                  | 040                 | 1080                       | -010                                   |                                  | -010  | 048               |                              |                           |
| 2. 1190                                       | 1210                  | 040                 | 1170                       | -020                                   |                                  | -020  | 048               |                              |                           |
| 3. 1260                                       | 1280                  |                     |                            |  |                                  | -020  | 048               |                              |                           |
| 4. 1050                                       | 1070                  |                     |                            |  |                                  | -020  | 044               |                              |                           |
| 5. 1120                                       | 1150                  |                     |                            |  |                                  | -030  | 048               |                              |                           |
| 6.  |                       |                     |                            |  |                                  |   |                   |                              |                           |
| 7.  |                       |                     |                            |  |                                  |   |                   |                              |                           |
| 8.  |                       |                     |                            |  |                                  |   |                   |                              |                           |
| 9.  |                       |                     |                            |  |                                  |   |                   |                              |                           |
| 10.   |                       |                     |                            |  |                                  |   |                   |                              |                           |
| 11.   |                       |                     |                            |  |                                  |   |                   |                              |                           |
| 12.   |                       |                     |                            |  |                                  |   |                   |                              |                           |
| Total   | Total of Tare Weights | 080                 |                            | Error Total for Each Column            |                                  | -080  | 0.000             |                              |                           |

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Average Tare Weight

Total Error

Number of UME's

Reject?

Average Error

0 > 0?

|                                 |                          |                           |   |  |   |
|---------------------------------|--------------------------|---------------------------|---|--|---|
| (14) Average Tare Weight<br>040 | (15) Total Error<br>-080 | (16) Number of UME's<br>0 | (17) Is (16) greater than (14)?<br>YES: REJECT <input type="checkbox"/><br>NO: Continue <input checked="" type="checkbox"/> | (18) Average Error (14) - (15)<br>-016 | (19) Is (18) Zero or Plus?<br>YES: ACCEPT LOT <input type="checkbox"/><br>NO: Go to P1 <input type="checkbox"/> |
|---------------------------------|--------------------------|---------------------------|---|--|---|

-0.080 + 0.000

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## Standard Deviation

$$\sqrt{\frac{\sum x_i^2 - (\sum x_i)^2 / n}{(n-1)}}$$

n = 5

| $x_i$              | $x_i^2$              |  |
|--------------------|----------------------|--|
| -0.10              | .0001                | $s = \sqrt{(.0014 - [(-.080)^2 / 5]) / 4}$ |
| -.020              | .0004                | $s = \sqrt{(.0014 - (.0064 / 5)) / 4}$     |
| -.020              | .0004                | $s = \sqrt{(.0014 - .00128) / 4}$          |
| -.020              | .0004                | $s = \sqrt{.00012 / 4}$                    |
| -.010              | .0001                | $s = \sqrt{.00003}$                        |
| $\sum x_i = -.080$ | $\sum x_i^2 = .0014$ | $s = .005$                                 |

step by step

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Standard Deviation  
Sample Correction Factor  
Sample Error Limit

|   |   |  |
|---|---|--|
| (21) Computed Standard Deviation of Sample Error<br><b>.005</b> | (22) Sample Correction Factor (Table 2-1, Col. 3)<br><b>124</b> | (23) Sample Error Limit (SEL) (21) x (22)<br><b>.006</b> |
|---|---|--|

QC Manual Table 2-1

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Compare SEL to Average Error

**[24] AVERAGE ERROR [18] IS MINUS (Use the absolute value of [18] for these determinations)**

**MLA**  Moisture Loss Allowance is greater than 0% \_\_\_\_\_ %

Is \_\_\_\_\_ [18] less than or equal to \_\_\_\_\_ [23] IF YES, ACCEPT

Is \_\_\_\_\_ [18] greater than \_\_\_\_\_ [23] + [4A] IF YES, REJECT

Is \_\_\_\_\_ [18] greater than \_\_\_\_\_ [23] AND less than or equal to \_\_\_\_\_ [23] + [4A] IF YES, COMMODITY IS IN THE GREY AREA. STATUS NOT DETERMINED.

**OTHER**  No Moisture Loss Allowance OR  Moisture Loss Allowance equals 0%

Is **.016** [18] less than or equal to **.006** [23] IF YES, ACCEPT

Is **.016** [18] greater than **.006** [23] IF YES, REJECT

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If the Sample Size is 11 or less, both the initial tare sample size and the total tare sample size is 2.  
There is no need to compute Rc/Rt or to take additional tare samples.

|                                |                                      |                         |                                       |
|--------------------------------|--------------------------------------|-------------------------|---------------------------------------|
| [10] No. - Range of Errors (2) | [11] No. - Range of Tare Weights (2) | [12] Range of Rc/Rt (2) | [13] Total Number of Tare (Table 2-5) |
|--------------------------------|--------------------------------------|-------------------------|---------------------------------------|

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Remaining Sample Data      Adjusted MAV  
Nominal Gross Weight      UME  
Calculate Errors  
MAV  
MLA

Average Tare Weight + Labeled Weight      QC Manual Table 2-5

| [1] Labeled Content or Nominal Average Weight (g) | [2] Gross Weight (g)  | [3] Tare Weight (g) | [4] Net Weight (g) | [5] Error (g) | [6] Number Gross Weights (2-17) | [7] Package Error (g) (Net Weight (g) - [2] - [3]) | [8] MAV (g) (Net Weight (g) - [2] - [3]) | [9] UME (g) (Net Weight (g) - [2] - [3]) | [10] Adjusted MAV (2-17) |
|---|-----------------------|---------------------|--------------------|---------------|---------------------------------|--|--|--|--------------------------|
| 14  | 14.28                 | .40                 | 13.89              | -.15          | 14.315                          | -.15   | .625                                     | .42                                      | 1.045                    |
| 2.  | 13.92                 | .39                 | 13.52              | -.475         |                                 | -.475  |  |  |                          |
| 3.  | 14.34                 |                     |                    | -.055         |                                 | -.055  |  |  |                          |
| 4.  | 13.82                 |                     |                    | -1.075        |                                 | -1.075   |  |  |                          |
| 5.  | 14.31                 |                     |                    | -.085         |                                 | -.085  |  |  |                          |
| 6.  |                       |                     |                    |               |                                 |  |  |  |                          |
| 7.  |                       |                     |                    |               |                                 |  |  |  |                          |
| 8.  |                       |                     |                    |               |                                 |  |  |  |                          |
| 9.  |                       |                     |                    |               |                                 |  |  |  |                          |
| 10.   |                       |                     |                    |               |                                 |  |  |  |                          |
| 11.   |                       |                     |                    |               |                                 |  |  |  |                          |
| 12.   |                       |                     |                    |               |                                 |  |  |  |                          |
| Total   | Total of Tare Weights | .79                 |                    |               | Error Total for Each Column     | -1.805   | 0.000                                    |  |                          |

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Average Tare Weight  
Total Error  
Number of UME's  
Reject?  
Average Error

|                          |                  |                      |  |                                 |   |
|--------------------------|------------------|----------------------|--|---------------------------------|---|
| [14] Average Tare Weight | [15] Total Error | [16] Number of UME's | [17] Is [16] greater than [15]?  | [18] Average Error (116) / [16] | [19] Is [18] Zero or Plus?  |
| .315                     | -1.805           | 1                    | YES: REJECT <input checked="" type="checkbox"/><br>NO: Continue <input type="checkbox"/> | -3.61                           | YES: ACCEPT LOT <input type="checkbox"/><br>NO: Go to P1 <input type="checkbox"/> |

1 > 0?

-2.095 + .000

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The End

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