

## Net Weight

### Objectives

After completing this module, the student will be able to:

1. Define the following terms:
  - Net Weight
  - Tare Weight
  - Labeled Weight
  - Standard Weight
  - Random Weight
  - Inspection Lot
  - Package Error
  - Total Package Error
  - Maximum Allowable Variation (MAV)
  - Decision Criteria
2. Describe the steps for verifying net weight.
3. Describe the criteria for passing an inspection lot.
4. Determine whether an inspection lot passes or fails for a given scenario.

### Resource Materials

- 9 CFR Part 442
- FSIS Directive 7000.1 *"Verification of Non-Food Safety Consumer Protection Requirements"*
- **NIST Handbook 44** *"Specifications, Tolerances, and Other Technical Requirements for Weighing and Measuring Devices,"* 1999 Edition, November 1988
- **NIST Handbook 133** *"Checking the Net Contents of Packaged Goods,"* Fourth Edition, January 2005

### Introduction

Meat and poultry establishments must assure that the net weight statement on a label is not false or misleading and expresses an **accurate** statement of the quantity of contents. Since absolute accuracy is virtually impossible, FSIS net weight regulations allow "reasonable" variations from labeled weight.

Section 9 CFR 442.1 prescribes the procedures to be followed for determining net weight compliance and prescribes the reasonable variations from the declared net weight on the labels of immediate containers of products in accordance with 9 CFR 317.2(c)(4), 317.2(h) and 381.121.

FSIS uses the **NIST Handbook 44** and the **NIST Handbook 133** standards as the basis for verifying net weights. FSIS has incorporated, by reference, the appropriate NIST standards in the Federal meat and poultry inspection regulations. Note: The specific sections of NIST Handbook 133 identified in 9 CFR 442.2(b) are **Not** to be utilized when verifying FSIS product net weights as they are not incorporated by reference.

## **Terminology**

**Net weight** -The weight of the packaged product remaining after the deduction for **tare** weight. It is the weight of the nutritious content in the container suitable for food.

**Drained weight** -The weight of the solids in the container when packed in non-nutritious media.

**Tare weight** -The weight of the container, box, wrapper or other packaging material. It is always excluded from gross weight when determining the actual net weight.

**Labeled weight** - The net weight declared on the label.

**Inspection lot** - A collection of identically labeled packages or containers from the same production shift available for inspection at one time. The IPP determines the inspection lot. The inspection lot passes or fails as a result of net weight testing.

**Standard weight packages** - Packages or containers that contain a predetermined amount of product and have identical net weight declarations, e.g., the full net weight statement is pre-printed on labeling, such as, Net Wt. 12 oz.

**Random weight packages** - Packages or containers that contain a varying amount of product and will not have identical net weight declarations, e.g., each package is weighed and the specific net weight is written into a printed open net weight statement, such as, Net Wt. \_\_\_\_\_ LBS, another example is when a scale generates an individual price/weight sticker to apply to the package.

## **Net Weight Lot Inspection Verification Task**

When IPP verify net weight compliance, they are to:

- Determine the inspection lot,
- Verify the scale regulatory requirements,
- Randomly collect a tare sample and determine the average tare weight,

- Randomly select sample units (packages or containers) from the inspection lot and weigh them,
- Determine the MAV, individual package errors, and total package error,

Task Name	9 CFR References	FSIS Issuance References	Inspection Personnel Verification Activities
<b>Labeling - Net Weights</b>	<b>9 CFR</b> §442.1, §442.2, §442.3, §442.4, §442.5	<b>NIST</b> Handbook 133 <b>NIST</b> Handbook 44 * FSIS inspectors are to use these handbooks as the definitive references for determinations of net weight compliance. Sections identified in §442.2(b) of NIST HB133 should <b>Not</b> be used.	<b>Select</b> an appropriate retail-sized product and 1. <b>Verify</b> net weight regulatory requirements by <b>reviewing</b> establishment records and <b>conducting</b> net weight/drain weight, scale calibration, or tare weight checks. 2. <b>Follow</b> the QC program requirements after evaluating the program to ensure that following the program results in compliance with net weight regulatory requirements.

- Apply the decision criteria to determine net weight compliance, and
- Take appropriate action based on net weight testing results.

Directive 7000.1, *Verification of Non-Food Safety Consumer Protection Regulatory Requirements*, identifies the regulations, references, and verification activities for performing the Net Weight task.

Prior to performing a net weight verification activity, IPP should review the requirements in *NIST Handbook 44* and then will verify net weight following the procedures in *NIST Handbook 133*. IPP must ensure the scales are of sufficient size, solidly supported, level and accurate. The scales are to be certified by the state's or local government's weights and measures authority or from a registered or licensed individual at least once per calendar year. The valid certification is to be displayed on or near the scale.

## **Steps to Determine Net Weight**

1. Determine the number of containers or packages in the inspection lot.

IPP should define which packages are to be tested as well as determine the size of the inspection lot. An *inspection lot* is defined as a collection of identically labeled packages

or containers from the same production shift available for inspection at one time. Enforcement action can only be taken on the packages contained in the lot that has been defined.

**Example: The inspection lot consists of 260 Standard Weight packages of beef ribeye steaks labeled with a net quantity of 16 oz. (1 lb) from company lot ABC packaged on 1/2/2019.**

NOTE: Lots may be made up of either standard or random weight packages. **“Standard packages”** are those with identical net content declarations such as containers of soda in 2 L bottles and 2.26 kg (5 lb) packages of flour. **“Random packages”** are those with differing or no fixed pattern of weight, such as packages of meat, poultry, fish, or cheese.

2. Refer to second column of Table 2-2 Sampling Plans for Category B from NIST Handbook 133.

<b>Table 2-2. Sampling Plans for Category B</b> (for Use in USDA-Inspected Meat and Poultry Plants Only)			
1	2	3	4
Inspection Lot Size	Sample Size	Initial Tare Sample Size	Number of Packages Allowed to Exceed the MAVs in Table 2-9
250 or Fewer	10	2	0
251 or More	30	5	0

There are sampling plans that are used when inspecting packages: “Category A” and “Category B”. IPP should use “Category B” sampling plans only to test meat and poultry products that are subject to USDA/FSIS regulatory requirements at the point-of-pack locations. IPP should use “Category A” sampling plan for all other packages. See Table 2-2 for Sampling Plans for Category B.

3. Record the inspection data.

All information collected should be recorded on an inspection form. There is no regulation or policy stating that there is a specific type of form that should be utilized to document the inspection data. However, there are two forms in the NIST Handbook 133, E2 and E3, or a personalized form that could be used. It may be more practical to write the information in a notebook vs a form. See **Attachment 2**.

IPP must become familiar with the required information needed to officially determine if net weight is in compliance. There are minimum requirements for the information that should be collected to verify net weight compliance. Each state may alter the forms slightly as long as the minimum NIST criteria are met. The IPP should attach any additional notes, worksheets, etc. as needed.

NOTE: When using the NIST form it would not be necessary to convert to dimensionless units in Boxes 15, 16, 17, & 18 if the weights are being verified in pounds. If you compare the FSIS form to the NIST form, the dimensionless units conversion and the information from blocks 20-24 have been deleted since they are not necessary.

**Example: Alterations such as adding instructions is an acceptable amendment to the NIST forms or deleting the dimensionless unit's conversion and the information from blocks 20-24, since they are not necessary.**

4. Select the random sample.

Testing a "sample" of packages from a lot instead of every package in a shipment is efficient, but the test results have a "sampling variability" that must be corrected before determining if the lot passes or fails.

A randomly selected sample is necessary to ensure statistical validity and reliable data. This is accomplished by using random numbers to determine which packages are chosen for inspection. Improper collection of sample packages can lead to bias and unreliable results. Appendix B of NIST Handbook 133 provides Random Number Tables and describes various ways to use the tables to randomly select packages within the inspection lot.

5. Randomly collect a tare sample and determine the average tare weight.

- See Column 3 of NIST Handbook 133 Table 2-2 Sampling Plan for Category B to determine the Initial Tare Sample Size based on the Inspection Lot Size
- If available, unused dry packaging may be used to determine the tare weight
- When packages are opened to determine the tare weight, use the first 2 (or 5) randomly selected packages of the Inspection Lot in order that they were selected to determine the dry tare weight.
- Weigh each set of packaging materials in the tare sample
- Add the weights together
- Divide the total tare weight by the sets of packaging material in the tare sample

NOTE: When the average tare weight is exactly half of a scale division, round the value up to the next scale division (e.g. If the scale units are 1 gram and tare 1=19 g and tare

2=20 g, round the 19.5 g average up to 20g). Additional rounding examples are in **Attachment 1** at the end of the module.

#### 6. Determine:

**Nominal Gross Weight:** Add the Average Tare Weight (as determined in step 5 above) to the labeled weight to determine the Nominal Gross Weight. Make sure you use the same units of measure for both values and that matches the units of measure of the scale being used. (average tare weight + labeled weight) = nominal gross weight

**Package error:** The difference between the gross weight (the weight of each individual sample package that includes the food product and the packaging weight) and the nominal gross weight.

(gross weight of the sample – nominal gross weight) = package error

-/+ Package error: When the nominal gross weight weighs more than the gross weight the sample package weighs more than what the label declares and is recorded as a positive (+) package error under the + column. When the nominal gross weight weighs less than the gross weight the sample package weighs more than what the label declares and is recorded as a negative (-) package error under the – column.

If desired, the package error may be expressed as “plus” or “minus” dimensionless unit by dividing the package error by the scale graduation. This method eliminates leading zeros and the units of measure and results in whole numbers.

**Example - if the scale division (unit of measure) is 0.001 lb and the package error is +0.038 lb,  $+0.038 \text{ lb} \div 0.001 \text{ lb} = +38$  (which could be recorded in the plus column). If a different package error is -0.003 lb, it would be recorded as “3” in the negative column, and so on (See Table 1 below).**

**Total Package Error:** The sum of all of the individual package errors.

-	+
1.	38
2.	12
3.	8
4.	4
5. 3	
6. 2	
7.	12
8. 3	
9.	4
10. 1	
<b>Total:</b> 9	<b>Total:</b> 78
<b>Total Package Error: +69</b>	

**Table 1: Maximum Allowable Variation (MAV):** The maximum amount the actual net weight of an individual package or container may be under its labeled weight. It represents the maximum underweight or short weight a package can be and still be considered “reasonable” under good manufacturing processes. The MAV is provided in NIST Handbook 133 Table 2-9.

**Table 2-9. U.S. Department of Agriculture, Meat and Poultry Groups and Lower Limits for Individual Packages (Maximum Allowable Variations)**

Definition of Group and Labeled Quantity		Lower Limit for Individual Weights (MAVs)
Homogenous Fluid When Filled (e.g., baby food or containers of lard)	All Other Products	
Less than 85 g or 3 oz		10% of labeled quantity
85 g or more to 453 g 3 oz or more to 16 oz		7.1 g 0.016 lb (0.25 oz)
More than 453 g More than 16 oz	85 g or more to 198 g 3 oz to 7 oz	14.2 g 0.031 lb (0.5 oz)
	More than 198 g to 1.36 kg 7 oz to 48 oz	28.3 g 0.062 lb (1 oz)
	More than 1.36 kg to 4.53 kg More than 48 oz to 160 oz	42.5 g 0.094 lb (1.5 oz)
	More than 4.53 kg More than 160 oz	1 % of labeled quantity

NOTE: To determine the lower limit for an individual weight (MAV) from Table 2-9, the IPP must first know whether not the product is a homogenous fluid when filled or not, and the labeled weight. Beef gravy is a homogenous fluid when filled; beef burritos are not a fluid when packaged. The lower limit for an 8-ounce beef burrito is 1.0 oz. The lower limit for a 20 lb box ground beef patties would be  $[.01 (1\%) \times 20 \text{ lb}] = 0.2 \text{ lb}$ .

7. Apply the decision criteria to determine net weight compliance.

Decision criteria: The rules for determining whether the inspection lot complies with the net weight requirements. The net weight test results must meet **BOTH** criteria.

- The total package error (sum of the individual package errors) is equal to or greater than zero; **AND**
- No individual minus package error can exceed the MAV.

**Example:** You perform the net weight task for an inspection lot of 250, 7.5 oz. (213 g) bowls of pasta in meat sauce. The scale divisions are 0.1 grams. You determine the MAV is -28.3 grams or -283 (converted to dimensionless

units). Table 1 (example shown above) lists the individual package errors and total package error and shows a total package error of +69. None of the values in the negative (-) column exceed the MAV. The inspected lot passes the net weight test because the total package error is zero or positive, and no individual minus package error exceeds the MAV.

8. Take appropriate action based on net weight testing results.

9 CFR 442.5 specifies that a lot tested in an official establishment and found not to comply with net weight requirements **may** be reprocessed and **must** be reweighed and remarked. A lot tested outside an official establishment **must** be reweighed and remarked with a proper weight statement.

## Example Using the Calculation Aid

Access the Calculation Aid as follows: Start Menu > FSIS Applications > Calculation Aid > Select Net Weights

**Net Weights**

Menu

Step 1: Calculate Average Tare Weight

scale graduation: .001

tare 1: .025 + tare 2: .025

2

=

average tare: 0.025

Calculate

Step 2: Calculate the MAV

lower limit: .062

scale graduation: .001


=

MAV: -62

Calculate

Next





**Net Weights**


Step 3: Enter sample weights


Reset

sample gross weight	sample labeled weight	individual package error
1.063	1.000	→ 38

Calculate and Save 


Total Samples Saved: 1




**Net Weights**

Step 4: Determine lot pass/fail

individual package errors

38	MAV
12	-62
8	
4	
-3.001	Make Determination 
-2.001	total package error
12	68.996
-3.001	
4	
-1.001	

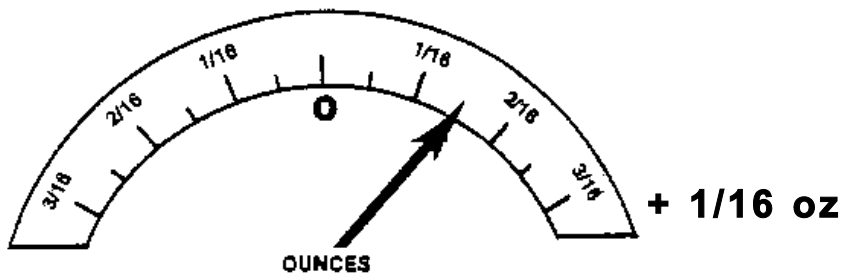
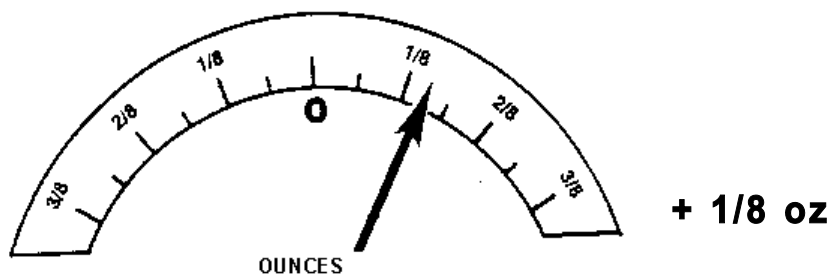
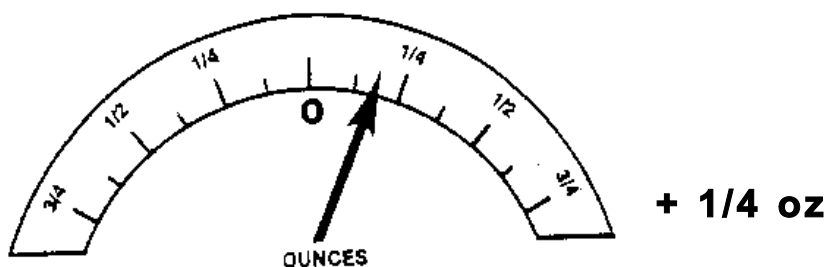
Lot passed.

## Attachment 1:

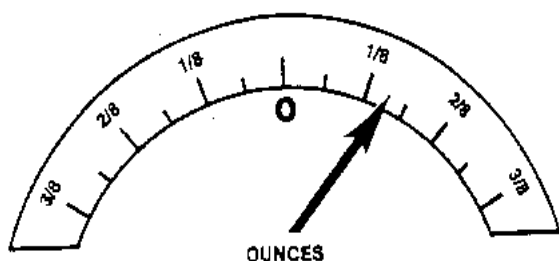
### Tare Rounding Examples

Tare Weights	Scale Graduation	Average Tare Weight	Rounded Tare Value
0.14 & 0.17 lb	0.01 lb	0.155 lb	0.16 lb
5/32 & 8/32 oz	1/32 oz	6.5/32 oz	7/32 oz
0.20 & 0.25 lb	0.05 lb	0.225 lb	0.25 lb
5.06 & 5.15 g	0.01 g	5.105 g	5.11 g

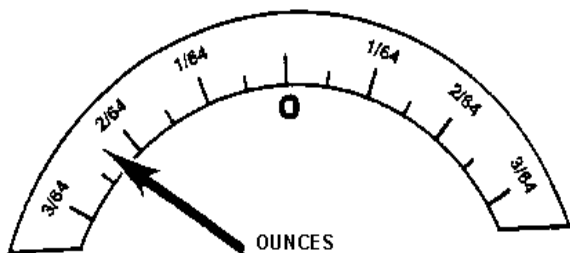
### Recording Tare Weight Using an Analog Scale



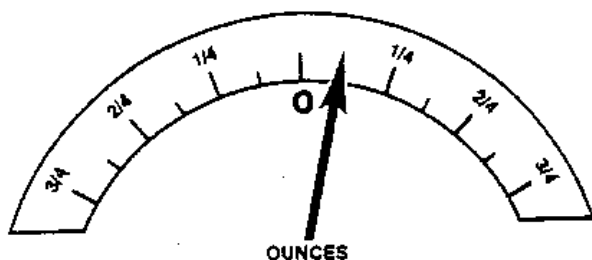
## Recording Gross Weight Using an Analog Scale



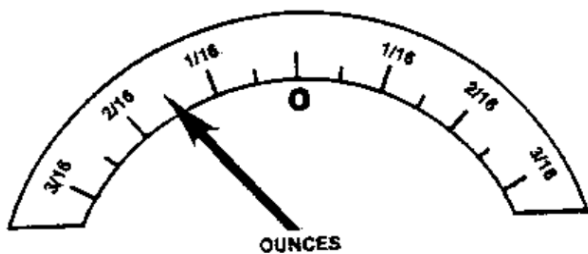
**+ 1/8 oz**



**- 2/64 oz**



**+ 1/4 oz**



**-**

## ATTACHMENT 2:

NET WEIGHT WORKSHEET					
DATE	ESTABLISHMENT NO.	SCALE DIVISION	AVERAGE TARE WT.	GROUP NO.	MAV (Lower Limit)
LOT SIZE	SAMPLE SIZE	PRODUCT AND CONTAINER CODE:			LABELED WEIGHT

STANDARD WEIGHTS (10 or 30 sample size)		
UNIT	+	-
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
TOTAL + 'S AND -'S (10 weights)		
TOTAL ERROR + 'S AND -'S (10 wts.)		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		
26		
27		
28		
29		
30		
TOTAL + 'S AND -'S (30 weights)		
TOTAL ERROR + 'S AND -'S (30 wts.)		

CATCH WEIGHTS (10 or 30 sample size)				
UNIT	LABEL WEIGHT	ACTUAL WEIGHT	+	-
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
TOTAL + 'S AND -'S (10 weights)				
TOTAL ERROR + 'S AND -'S (10 weights)				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				
TOTAL + 'S AND -'S (30 weights)				
TOTAL ERROR + 'S AND -'S (30 weights)				

### PASS / FAIL DECISION CRITERIA

MAV CRITERIA: Is any single minus (-) unit greater than the MAV?

☐ YES - Lot Fails ☐ NO - Check Total Error

TOTAL ERROR CRITERIA: Is the total error equal to or greater than zero?

☐ YES - Lot is Acceptable ☐ NO - Lot Fails

FSIS FORM 7240-1 (7/91)

REPLACES FSIS FORM 7240-1 (3/86), WHICH IS OBSOLETE.

[illegible]

Date: January 20, 2010		<b>Random Package Report – Example</b>				Sampling Plan: <input checked="" type="checkbox"/> A <input type="checkbox"/> B		Report Number: 17		
Location (name, address): L&O Market MacCorkle Ave. Charleston, WV 25171		Product/Brand Identity: Ground Chuck		Manufacturer: Meat Dept. - L&O Market		Container Description: 2S Tray w/soaker and plastic wrap				
		Lot Codes: 1, 19, 99								
1. Labeled Quantity: (Enter weight for each package in Column 1 below.)		2. Unit of Measure: 0.001 lb		3. MAV: (Look up the MAV for each package with a minus error (-), convert it to dimensionless units and enter this value in the Box 4 column below.)		5. Inspection Lot Size: 23		6. Sample Size (n): 12		
7. Initial Tare Sample Size: 2		8. Number of MAVs Allowed: 0		9. Range of Package Errors (Rc): 10		10. Range of Tare Weights (Rt): 1		11. Rc/Rt: (Box 9 ÷ Box 10 =) 10		
13. Avg. Tare Wt: 0.020 lb		13a. <input type="checkbox"/> Tare Correction <input type="checkbox"/> Moisture Allowance <input checked="" type="checkbox"/> Not Applicable		14. Nominal Gross Wt: (Labeled Wt + Box 13 – Box 13a =) Label Wt + 0.020 lb						
<input checked="" type="checkbox"/> Used Dry Tare <input type="checkbox"/> Wet Tare <input type="checkbox"/> Unused Dry Tare										
	Pkg 1	Pkg 2	Pkg 3	Pkg 4	Pkg 5	Pkg 6	Pkg 7	Pkg 8	Pkg 9	
a. Gross Wt	1.852 lb	1.223 lb								
b. Tare Wt	0.020 lb	0.021 lb								
c. Net Wt	1.832 lb	1.202 lb								
d. Package Error	-18	-8								
Product Description, Lot Code, Unit Price				Money Errors		Column 1 Labeled Net Weight		Package Errors		4. MAV Dimension- less Units
				-	+			-	+	
1. Ground Chuck – 1, 19, 99 – \$1.79 per lb						1.85 lb		18		
2.						1.21 lb		7		
3.						1.56 lb		8		
4.						1.98 lb		14		
5.				\$ 0.04		1.07 lb		23	44	
6.						1.55 lb		16		
7.						1.02 lb		2		
8.				\$ 0.04		1.44 lb		25	56	
9.						1.33 lb		16		
10.						2.03 lb		20	70	
11.						1.73 lb		14		
12.						1.16 lb		11		
13.										
14.										
15.										
16.										
						Totals		-174		
15. Total Error: - 174		16. Number of unreasonable minus (-) errors: (Compare each package error with the MAV in Column 4.) 0		17. Is Box 16 greater than Box 8? <input type="checkbox"/> Yes, lot fails <input checked="" type="checkbox"/> No, go to Box 18		18. Avg. error in dimensionless units: (Box 15 ÷ Box 6 =) - 14.5		19. Avg. error in labeled units: (Box 18 × Box 2 =) - 0.014 lb		
20. Does Box 18 = Zero (0) or Plus (+)? <input type="checkbox"/> Yes, lot passes, go to Box 25 <input checked="" type="checkbox"/> No, go to Box 21		21. Compute Sample Standard Deviation: 6.721		22. Sample Correction Factor: 0.635		23. Compute Sample Error Limit: (Box 21 × Box 22 =) 4.267				
24. Disregarding the signs, is Box 18 larger than Box 23? <input checked="" type="checkbox"/> Yes, lot fails, go to Box 25 <input type="checkbox"/> No, lot passes, go to Box 25						25. Disposition of Inspection Lot: <input type="checkbox"/> Approved <input checked="" type="checkbox"/> Rejected				
Comments						Official's Signature:				
						Acknowledgement of Report:				

## Net Weight Workshop

**Scenario 1:** You are in an establishment producing raw, non-intact beef product producing packages of ground chuck. The current number of packages available for sampling is 237. The unit of measure for the certified scale being used is 0.001 lb.

<b>Table 2-2. Sampling Plans for Category B</b> (for Use in USDA-Inspected Meat and Poultry Plants Only)			
1	2	3	4
Inspection Lot Size	Sample Size	Initial Tare Sample Size	Number of Packages Allowed to Exceed the MAVs in Table 2-9
250 or Fewer	10	2	0
251 or More	30	5	0

What is the sample size of the packages that you should examine? \_\_\_\_\_

What is the initial tare sample size? \_\_\_\_\_

<b>Table 2-9. U. S. Department of Agriculture, Meat and Poultry Groups and Lower Limits for Individual Packages (Maximum Allowable Variations)</b>		
Definition of Group and Labeled Quantity		Lower Limit for Individual Weights (MAVs)
Homogenous Fluid When Filled (e.g., baby food or containers of lard)	All Other Products	
Less than 85 g or 3 oz		10% of labeled quantity
85 g or more to 453 g 3 oz or more to 16oz		7.1 g 0.016 lb (0.25 oz)
More than 453 g More than 16 oz	85 g or more to 198 g 3 oz to 7 oz	14.2 g 0.031 lb (0.5 oz)
	More than 198 g to 1.36 kg 7 oz to 48 oz	28.3 g 0.062 lb (1 oz)
	More than 1.36 kg to 4.53 kg More than 48 oz to 160 oz	42.5 g 0.094 lb (1.5 oz)
	More than 4.53 kg More than 160 oz	1 % of labeled quantity

Sample tare weights: 0.020 lb and 0.021 lb.

What is the Average Tare Weight? \_\_\_\_\_.

What would constitute a failure of MAV criteria? \_\_\_\_\_.

Gross weight (lb)	Labeled Net Weight (lb)	Nominal Gross Weight (lb)	Package Error +	Package Error -
1.889	1.85			
1.238	1.21			
1.589	1.56			
2.015	1.98			
1.114	1.07			
1.587	1.55			
1.043	1.02			
1.486	1.44			
1.367	1.33			
2.071	2.03			

What is the total package error? \_\_\_\_\_

Does this lot pass? Yes \_\_\_\_\_ No \_\_\_\_\_

**Scenario 2:** You are in an establishment producing 8 oz (226 grams) individually packaged frozen burritos. There are 1600 packages currently available for sampling. The unit of measure for the certified scale in use is .1 grams. You weigh two complete sets of the packaging material. One set weighs 2.2 g and the other set weighs 2.3 g. You place the heavier set packaging material back on the scale (2.3 g is the average tare weight and press the "Tare" button to zero out the scale before weighing the product filled packages.

What is the sample size of the packages you should examine? \_\_\_\_\_

What would constitute a failure of MAV criteria? \_\_\_\_\_

Net Weight (g)	Labeled Net Weight (g)	Package Error (g)
236.4	227	
232.2	227	
226.6	227	
242.8	227	
228.9	227	
234.0	227	
222.2	227	
230.5	227	



236.3	227	
218.2	227	
238.9	227	
230.3	227	
232.4	227	
230.0	227	
230.4	227	
228.7	227	
234.6	227	
238.3	227	
240.0	227	
230.8	227	
232.2	227	
198.0	227	
240.7	227	
236.6	227	
242.0	227	
232.9	227	
196.2	227	
236.0	227	
228.5	227	
234.1	227	

What was the total package error? \_\_\_\_\_

Did the lot meet the MAV criteria? \_\_\_\_\_

Did the lot pass? \_\_\_\_\_

**Scenario 3:** You are in an establishment producing 5 lb packages of raw, frozen chicken breasts. There are 243 packages currently available for sampling. The unit of measure for the certified scale being used is 0.001 lb.

What is the sample size of the packages you should examine? \_\_\_\_\_

What is the initial tare sample size? \_\_\_\_\_

Tare weights sampled: 0.072, 0.073

Average tare weight \_\_\_\_\_

What would constitute a failure of MAV criteria? \_\_\_\_\_

Gross Weight (lb)	Labeled Net Weight (lb)	Nominal Gross Weight (lb)	Package Error
5.098	5.000		
5.095	5.000		
5.079	5.000		
4.998	5.000		
5.088	5.000		
5.083	5.000		
5.071	5.000		
5.089	5.000		
5.092	5.000		
5.067	5.000		

What was the total package error? \_\_\_\_\_

Did the lot meet the MAV criteria? \_\_\_\_\_

Did the lot pass? \_\_\_\_\_

**Scenario 4:** You are in an establishment producing 50 lb boxes of young chicken thigh meat. There are 175 boxes in the inspection lot. The certified scale has 0.01 lb divisions.

What is the sample size of the packages you should examine? \_\_\_\_\_

What is the initial tare sample size? \_\_\_\_\_

Tare weights sampled: 0.15 lb and 0.16 lb.

Average tare weight? \_\_\_\_\_

What would constitute a failure of MAV criteria? \_\_\_\_\_

Gross weight (lb)	Labeled Net Weight (lb)	Nominal Gross Weight (lb)	Package Error
50.10	50		
50.25	50		
50.19	50		
50.02	50		
50.20	50		
50.15	50		
50.17	50		
50.23	50		
50.07	50		
50.18	50		

What was the total package error? \_\_\_\_\_

Did the lot meet the MAV criteria? \_\_\_\_\_

Did the lot pass? \_\_\_\_\_

What action should the CSI take for this inspection lot?

**Scenario 5:** You are assigned to an establishment that packages 12 oz net weight microwavable meatball entrees in plastic covered trays in paper cartons. The inspection lot is 100 boxes. The certified scale has 0.01 oz divisions. You weigh two complete set of the packaging material. Both tare samples weigh the same. After weighing the second sample, you press the “Tare” button to zero out the scale before weighing the product filled packages.

What is the sample size of the packages you should examine? \_\_\_\_\_

What would constitute a failure of the MAV criteria? \_\_\_\_\_

You obtain the following results on the full packages weighed:

Net Weight (oz)	Package Error (oz)
12.10	
12.52	
12.19	
11.02	
12.20	
12.15	
12.17	
12.23	
10.77	
12.18	

What is the total package error? \_\_\_\_\_

Was the MAV exceeded? \_\_\_\_\_

Pass/Fail? \_\_\_\_\_