

NS 332

Project 1: Dietary reference intakes and food labels (50 points)

DUE:

NAME: _____

Scenario: It is winter in Wisconsin and local meteorologists have predicted a snowstorm with up to 26 inches of snowfall. Charlotte is wondering whether to go to the store to replenish her food pantry or if she has enough to get her through 3 days of being snowed in. Help her analyze her pantry and refrigerator to determine whether she has enough food to keep her nourished by using the attached nutrition labels. First, however, you will have to determine her needs based on the DRIs in order to compare them to the DVs on the food labels. The last couple pages in the text provide the current DRIs, as well as the AMDR.

SHOW ALL WORK to receive partial credit for wrong answers.

Answers **MUST BE LEGIBLE** or they will get ZERO points.

Katrina Lewis:

- Age: 21y
- Height: 165 cm
- Weight: 62 kg
- Gender: F
- Activity level: active

Part 1: Requirement calculations. (17pts)

1. Calculate the estimated energy requirement (EER) per day (kcal/day) and total EER for 3 days required by Charlotte. Use the EER equation and physical activity factor provided in Chapter 10, pg 319-20 of the 8th edition of the course text. (2pts)

EER per day (kcal/day) _____ Total EER for 3 days _____

2. Calculate Charlotte's daily protein requirement (g/day) and for 3 days. What type of DRI is the protein requirement? (3 pts)

Type of DRI _____

Protein per day (g/day) _____ total protein for 3 days _____

3. What are Charlotte's daily carbohydrate requirement (g/day) and her total carbohydrate requirement for 3 days based on the DRIs and AMDR? How many calories from carbohydrate is this? (2pts)

Carbohydrate per day (g/day) _____ Carbohydrate per day (Kcal/day) _____

Carbohydrate intake (% total energy) _____ Carbohydrate for 3 days _____

4. Calculate her total iron requirement (mg) for 3 days based on the RDA. (1pt)

Iron (mg) for 3 days _____

5. Calculate the total vitamin A requirement (μg) for 3 days for Charlotte, based on the RDA and daily value. See table 2-2 of the text, 8th edition. (2pts)

Vitamin A (μg) for 3 days from RDA _____ From DV _____

6. Calculate the total vitamin C requirement (mg) for 3 days for Charlotte, based on the RDA and daily value. (2pts)

Vitamin C (mg) for 3 days from RDA _____ From DV _____

7. Calculate her total calcium requirement (mg) for 3 days based on the RDA and daily value. (2pts)

Calcium (mg) for 3 days from RDA _____ From DV _____

8. What is her DRI for daily fiber intake? (1pt)

Daily fiber (g) _____

9. Based on the dietary guidelines (listed in figure 2-6 in the 8th edition), what is the recommendation for Charlotte's daily cholesterol intake? (2pts)

Daily cholesterol (mg) intake: _____

3. Does the food meet her micronutrient needs if she were to be snowed in for 3 days? List the micronutrients that she won't meet her needs for. (2pts)

4. Based on the provisions of the food she has in comparison with what her needs are, do you recommend she go to the store prior to the storm? (5pts)

Pt III Recipe Calculation (8pts)

During the storm, Charlotte makes the following meal to be shared by herself and her roommate and they eat all of it (they each eat exactly the same amount). The meal consists of:

4 corn tortillas

2 chicken breasts

1 can refried beans

½ cup of salsa

1. Use the food labels to calculate total calories, grams protein, and grams carbohydrate provided **per person** by this meal. (4pts)

Total calories (kcal)_____ Total protein (g)_____

Total carbohydrate (g)_____ Total fat (g)_____

2. What is the macronutrient distribution of the meal? (3pts)

%Carbohydrate_____ %Protein_____ %Fat_____

3. What percent of Charlotte's daily vitamin C requirement (RDA) is met? (1pt)

Vitamin C (%RDA)_____

Refried Beans (2 cups total) Corn Tortillas (12 total)

Nutrition Facts

Serving Size: 1 cup (252g)

Amount Per Serving		% Daily Value*	
Calories	237	Calories from Fat	29
Total Fat	3.18 g		5%
Saturated Fat	1.19 g		6%
Trans Fat			
Cholesterol	20.16 mg		7%
Sodium	753.48 mg		31%
Potassium	672.84 mg		19%
Total Carbohydrate	39.14 g		13%
Dietary Fiber	13.36 g		53%
Sugars	0.58 g		
Sugar Alcohols			
Protein	13.83 g		
Vitamin A	0 IU		0%
Vitamin C	15.12 mg		25%
Calcium	88.2 mg		9%
Iron	4.18 mg		23%

Black bean and corn salsa

Nutrition Facts

Serving Size 1/2 cup (193 g)
Servings per container 5

Amount Per Serving		% Daily Value*	
Calories	78	Calories from Fat	9
Total Fat	1g		2%
Saturated Fat	0g		1%
Trans Fat			
Cholesterol	0mg		0%
Sodium	506mg		21%
Total Carbohydrate	14g		5%
Dietary Fiber	2g		8%
Sugars	1g		
Protein	6g		
Vitamin A	14%	Vitamin C	75%
Calcium	3%	Iron	13%

*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs.

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Serving Size: 1 tortilla • 27g

Amount Per Serving		% Daily Value*	
Calories	60	Calories from Fat	5
Total Fat	0.5g		1%
Saturated Fat	0g		0%
Cholesterol	0mg		0%
Sodium	40mg		2%
Total Carbohydrate	12g		4%
Dietary Fiber	1g		4%
Sugars	0g		
Protein	1g		2%
Vitamin A	0%	Vitamin C	0%
Calcium	4%	Iron	2%

Unofficial Pts: 1

Percent of Calories from:
Fat-8.3% **Carb-80%** **Protein-6.7%**
 (Total may not equate 100% due to rounding.)

Info for 1 chicken breast
She has 4 in her fridge

Nutrition Facts

Serving Size: 1 unit (from 1 lb chkn) (52g)

Amount Per Serving		% Daily Value*	
Calories	86	Calories from Fat	17
Total Fat	1.86 g		3%
Saturated Fat	0.53 g		3%
Trans Fat			
Cholesterol	44.2 mg		15%
Sodium	38.48 mg		2%
Potassium	133.12 mg		4%
Total Carbohydrate	0 g		0%
Dietary Fiber	0 g		0%
Sugars	0 g		
Sugar Alcohols	0 g		
Protein	16.13 g		
Vitamin A	10.4 IU		0%
Vitamin C	0 mg		0%
Calcium	7.8 mg		1%
Iron	0.54 mg		3%

Raisin bran, whole box

INGREDIENTS: WHOLE WHEAT KERNELS INCLUDING THE BRAN, RAISINS, SUGAR, SALT, MALT SYRUP, NIACIN, RIBOFLAVIN (VITAMIN B₂), THIAMIN MONONITRATE (VITAMIN B₁)

Nutrition Facts

Serving Size 1 cup (55g)
Servings Per Container About 8

Amount Per Serving		% Daily Value*	
Calories	170	Calories from Fat	10
Total Fat	1g		2%
Saturated Fat	0g		0%
Cholesterol	0mg		0%
Sodium	85mg		4%
Total Carbohydrate	41g		14%
Dietary Fiber	7g		28%
Sugars	13g		
Protein	6g		
Vitamin A 0%	Vitamin C 0%		
Calcium 0%	Iron 6%		
Thiamine 45%	Riboflavin 45%		
Niacin 45%			

Pasta , whole box

Nutrition Facts

Serving Size 2 oz (56g-1/7 box)
Servings Per Container 7

Amount Per Serving	Per 56g	Per 100g
Calories	210	370
Calories from Fat	20	30
	% Daily Value*	% Daily Value*
Total Fat	2g 3%	3g 5%
Saturated Fat	0g 0%	0.5g 3%
Trans Fat	0g	0g
Cholesterol	0mg 0%	0mg 0%
Sodium	25mg 1%	45mg 2%
Total Carbohydrate	38g 13%	67g 22%
Dietary Fiber	4g 16%	7g 28%
Sugars	2g	3g
Protein	10g 17%	17g 30%
	56g, 100g	56g, 100g
Vitamin A	0%, 0%	Vitamin C 0%, 0%
Calcium	2%, 4%	Iron 15%, 25%
Thiamin	35%, 65%	Riboflavin 15%, 30%
Niacin	15%, 30%	Folate 40%, 70%

*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:

	Calories: 2,000	2,500
Total Fat	Less than 65g	80g
Sat Fat	Less than 20g	25g
Cholesterol	Less than 300mg	300mg
Sodium	Less than 2,400mg	2,400mg
Total Carbohydrate	300g	375g
Dietary Fiber	75g	100g
Protein	50g	65g

Calories per gram: Fat 9 • Carbohydrate 4 • Protein 4

Pasta Sauce 1% milk- she only has 1 cup left Eggs- she has 6 left

Nutrition Facts	
Serving Size	1/2 cup (125g)
Servings Per Container	About 6
Amount Per Serving	
Calories 70	Calories from fat 25
% Daily Value*	
Total Fat 2.5g	4%
Saturated Fat 0g	0%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 300mg	13%
Potassium 330mg	9%
Total Carbohydrate 9g	3%
Dietary Fiber 5g	20%
Sugars 4g	
Protein 2g	4%
Vitamin A 20%	• Vitamin C 20%
Calcium 4%	• Iron 10%
Thiamin (B1) 8%	• Riboflavin (B2) 6%
Niacin (B3) 8%	• Folate 2%
Phosphorus 4%	• Magnesium 8%
Zinc 2%	
*Percent Daily Values are based on a 2,000 calorie diet.	

HOMOGENIZED • ULTRA-PASTEURIZED

Nutrition Facts			
Serving Size 1 cup (240 mL)			
Servings Per Container: About 8			
Amount Per Serving			
Calories 130	Calories from Fat: 20		
% Daily Value*			
Total Fat 2.5g	4%		
Saturated Fat 1.5g	8%		
Trans Fat 0g			
Polyunsaturated Fat 0g			
Monounsaturated Fat .5g			
Cholesterol 10mg	4%		
Sodium 170mg	7%		
Total Carbohydrate 16g	5%		
Dietary Fiber 0g	0%		
Sugars 15g			
Protein 11g	22%		
Vitamin A 10%	• Vitamin C 0%		
Calcium 40%	• Iron 0%		
Vitamin D 25%			
*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs.			
	Calories	2,000	2,500
Total Fat	Less than	65g	80g
Sat Fat	Less than	20g	25g
Cholesterol	Less than	300mg	300mg
Sodium	Less than	2400mg	2400mg
Total Carbohydrate		300g	375g
Dietary Fiber		25g	30g
Protein		50mg	65mg

Nutrition Facts			
Serving Size	1 egg (50g)		
Serving per Container	12		
Amount Per Serving			
Calories 70	Calories from Fat 40		
% Daily Value*			
Total Fat 4.5g	7%		
Saturated Fat 1.5g	8%		
Polyunsaturated Fat .5g			
Monounsaturated Fat 2.0g			
Cholesterol 215mg	71%		
Sodium 65mg	3%		
Potassium 60mg	2%		
Total Carbohydrate 1g	0%		
Protein 6g	10%		
Vitamin A 6% • Vitamin C 0%			
Calcium 2% • Iron 4% • Thiamin 2%			
Riboflavin 15% • Vitamin B-6 4%			
Folate 6% • Vitamin B-12 8%			
Phosphorus 8% • Zinc 4%			
Not a significant source of Dietary Fiber or Sugars.			
*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs.			
	Calories	2,000	2,500
Total Fat	Less than	65g	80g
Sat Fat	Less than	20g	25g
Cholesterol	Less than	300mg	300mg
Sodium	Less than	2,400mg	2,400mg
Potassium		3,500mg	3,500mg
Total Carbohydrate		300g	375g
Dietary Fiber		25g	30g
Protein		50g	65g
Calories per gram			
Fat 9 • Carbohydrate 4 • Protein 4			