Dietary Analysis Assignment (65 pts)

Part 1: Using the recommendations discussed in the lecture, calculate the daily needs for Jane and Joe. Answers should be given in a range (i.e. 1200 – 1400 kcals or 45 – 105 g). Handwritten answers will receive a 0. All answers must be typed. (36 pts)

Jane

20 years old female, 128 lbs, 5'7", very active

Height	5 ft 7. in	Saturated Fat (10% of kcals)	
	170 cm		
	1.70 m		280 kcals
			31 g
Weight	128 lbs	Water (calculate one of the following methods)	
	58.2 kg	35 ml/kg	2037 ml
			2.8 L
Total Daily Calories	2795 kcals		61 fl oz
			7.625 c
CHOs (45-65% of kcals)	1257-1816 kcals		
	314-454 g	1.0 ml/kcal	2795 ml
			2.8 L
Protein (10-35% of kcals)			83.85 fl oz
	280-978 kcals		10.5 c
	70-245 g		
Protein (0.8 – 1.0 g/kg)		1.5 ml/kcal	4192.5 ml
	47-58 g		4.2 L
Fat (20-35% of kcals)			125.76 fl oz
	559-978 kcals		~15.75 c
	62-108 g		

Show your work for Jane on this page for up to 3 pts extra credit. Handwritten work will be accepted for this section.

Height:

5ft x 12 in = 60 in
60 in + 7 in = 67
67 / 39.37 = 1.7m
1.7 x 100 = 170 cm

Weight:

128 lbs / 2.2 kg = 58.2 kg

CHOs

45 - 65 %
2795 x .45 = 1,257 kcals
2795 x .65 = 1,816 kcals
1257 kcals / 4 kcals = 314 g CHO
1816 kcals / 4 kcals = 454 g CHO
1257 - 1816 kcals
314 - 454 g/CHO

Fats:

2795 x .2 = 559 kcals
2795 x .35 = 978 kcals
559 kcals / 9 kcals = 62 g
978 kcals / 9 kcals = 108 g
559 - 978 kcals
62 - 108 g/fat

Saturated Fat:

2795 x .10 = 280 kcals
280 kcals / 9 kcals = 31 g

EER:

[354 - (6.91 x 20)] + 1.45 x [(9.36 x 58.2) + (726 x 1.7)]
[354 - 138.2] + 1.45 x [544.752 + 1234.2]
215.8 + 1.45 x 1778.952
215.8 + 2579.480
2795.280
2795 kcals

Protein:

2795 x .10 = 280 kcals
2795 x .35 = 978 kcals
280 kcals / 4 kcals = 70 g
978 kcals / 4 kcals = 245 g
280 - 978 kcals/protein
70 - 245 g/protein

Water:

35 mL/kg
35 x 58.2 kg = 2037 mL/d
1000 mL = 1 mL
2795 / 1000 = 2.795 or 2.8L
1 mL = 0.03 fl oz
2037 mL x 0.03 = 61 fl oz
1 cup = 8 oz
61 / 8 = 15/8 cups

1.0 mL/kcal
2795 x 1.0 = 2795 mL
2795 / 1000 = 2.8L
2795 x .03 = 83.85 oz
83.85 / 8 = 10 1/2 cups

1.5 mL/kcal
2795 x 1.5 = 4192.5 mL
4192 / 1000 = 4.2L
4192 x .03 = 125.76 oz
125.76 / 8 = ~15 3/4 c

Handwritten answers will receive a 0. All answers must be typed.

Joe **20 years old male, 6'2", 216 lbs, sedentary**	
Height	6 ft 2 in
	187 cm
	1.87 m
Weight	216 lbs
	98.2 kg
Total Daily Calories	3391 kcals
CHOs (45-65% of kcals)	1506-2204 kcals
	382-551 g
Protein (10-35% of kcals)	
	339-1187 kcals
	85-297 g
Protein (0.8 – 1.0 g/kg)	
	78-98 g
Fat (20-35% of kcals)	
	678-1187 kcals
	75-132 g
Saturated Fat (10% of kcals)	
	339 kcals
	37 g
Water (calculate one of the following methods)	
	3437 ml
	3.4 L
	103 fl oz
	13 c
1.0 ml/kcal	3391 ml
	~3.4 L
	101.73 fl oz
	12.75 c
1.5 ml/kcal	5087 ml
	5.1 L
	152.61 fl oz
	~19 c

Show your work for Jane on this page for up to 3 pts extra credit. Handwritten work will be accepted for this section.

Weight

216 / 2.2 = 98.2 kg

Height:

6 x 12 = 72 in
+2 in = 74
74 / 39.37 = 1.87 m

EER:

[662 - (9.53 x 20)] + 1.0 x [(15.91 x 98.2) + (726 x 1.87)]
[662 - 190.6] + 1.0 x [1562.362 + 1357.62]
471.4 + 1.0 x 2919.982
471.4 + 2919.982
3391 kcal

CHOs

3391 x .45 = 1526 kcal
3391 x .65 = 2204 kcal
1526 / 4 = 382 g
2204 / 4 = 551 g
382 - 551 g CHO

Fats

3391 x .2 = 678 kcal
3391 x .35 = 1187 kcal
678 / 9 = 75 g
1187 / 9 = 132 g

Saturated Fat:

3391 x .10 = 339 kcal
339 / 9 = 37
37 g SatF

Protein:

3391 x .10 = 339 kcal
3391 x .35 = 1187 kcal
339 / 4 = 85 g
1187 / 4 = 297 g
98.2 kg x .8 = 78 g
98.2 kg x 1.0 = 98 g

Water:

98.2 kg x 35 mL/kg = 3,437 mL/d
3437 / 1000 = 3.4 L
3437 x .03 = 103 oz
103 / 8 = 13 cups

1.0

3391 x 1.0 = 3391 mL
3391 / 1000 = ~3.4 L
3391 x 0.03 = 101.73 oz
101.73 / 8 = 12 3/4 c

1.5

3391 x 1.5 = 5087 mL
5087 / 1000 = 5.1 L
5087 x 0.03 = 152.61 oz
152.61 / 8 = ~19 c

Using the RDA, determine Jane and Joe's needs for the following micronutrients. Be sure to list the correct measurement (mcg, mg, g, etc.). (4 pts)

Nutrient	Jane	Joe
Calcium	1000 mg	1000 mg
Iron	18 mg	8 mg
Zinc	8 mg	11 mg
Fiber	25 g	38 g

Part 2: Cron-O-Meter Daily Intake Report (6 pts)

- Create a free CRON-O-Meter account at https://cronometer.com/
- Enter the intake from the one-day food diary provided. Disregard the targets it gives you, we are using the estimated needs you calculated above.
- Print the Food Diary and nutrient breakdown for the day.
  - Print the page to a pdf.
  - If using the App, print the Daily Report: https://support.cronometer.com/hc/en-us/articles/360020712271-Mobile-Daily-Report
  - If using the web version, print the Nutrients Target Summary: https://support.cronometer.com/hc/en-us/articles/360018069532-Nutrient-Targets-Summary
- Your report should look something like this
- For assistance with CRON-O-Meter use the "help" button on the CRON-O-Meter site.

Part 3: Evaluation (12 pts)

Choose either the Jane or Joe to evaluate, circle or highlight their name on the Table. Use the estimated needs you calculated above and the *Report* from CHRON-O-Meter to complete the following table.

If intake is within the estimated needs range place a dash (-) in the last column. If it is outside of the estimated needs range, put how much it is over (+) or under (-) in the last column.

	Estimated needs Vs Actual Intake	Were the daily needs met? *Yes or No* (8 pts)	Over/under by how much *(e.g. +10 or -5)* (4 pts)
Who are you evaluating? Jane or Joe			
Example: *Saturated Fat*	*Est Needs:* *Actual Intake:*		
Calories	*Est Needs:* 2795 kcals *Actual Intake:* 3117 kcals	Yes	+322kcals
Carbohydrates	*Est Needs:* 314-454g *Actual Intake:* 452.8	Yes	-1.2g from maximum
Protein **(0.8 – 1.0 g/kg)**	*Est Needs:* 47-58g *Actual Intake:* 108.4g	Yes	-50.4g from maximum
Fat	*Est Needs:* 62-108 g *Actual Intake:* 102.2g	Yes	-5.8g from maximum
Calcium	*Est Needs:* 1000mg *Actual Intake:* 1695.2mg	Yes	+695.2mg
Iron	*Est Needs:* 18 mg *Actual Intake:* 17.5mg	No	-0.5mg
Zinc	*Est Needs:* 8mg *Actual Intake:* 17.3mg	Yes	+9.3mg
Fiber	*Est Needs:* 25g *Actual Intake:* 18.1g	No	-6.9g

Part 4: Diet Compliance (7 pts)

Identify the items in the Food Diary that do not comply with a Ovo-Vegetarian diet. What would you recommend replacing them with to help meet Jane of Joe's needs? (Use the same individual you selected to complete the Table for.)

Note: Substitutions and menus must be comprised of whole foods and cannot include supplements such as protein bars, shakes, vitamins, minerals, protein, fat, fiber, creatine, amino acids, etc.

Foods to remove (3.5 pts)	What would you add in place of the food you removed to create increase the nutrients noted in the table above? (3.5 pts)
Half&half and milk	Unsweetened oat milk or soy milk
Ice Cream	Frozen banana blended with cocoa powder and a splash of oat milk
Yogurt	Scrambled eggs with some greens
Special K Protein Bar	Handful of almonds or apple slices with some peanut butter
Pizza Hut Pizza	Homemade veggie pizza
Snickers	Trail mix with nuts, seeds, and a few dark chocolate chips
Beef steak	Baked tofu seasoned with herbs and spices
Mashed potatoes	Mashed potatoes with plant-based milk and olive oil
Butter sauce	Replace butter sauce with olive oil, garlic, and a sprinkle of salt