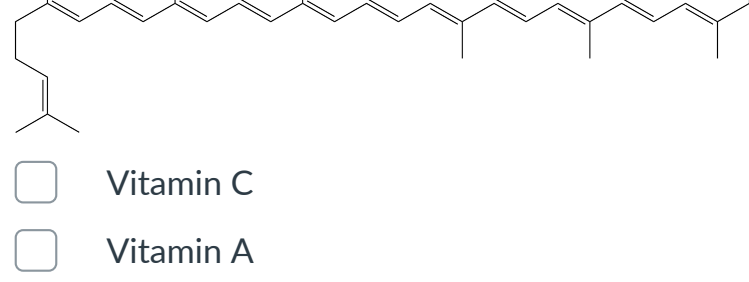


HW08 - Chemistry of Nutrition & Booze

1 6 points

Lycopene is a compound responsible for red color in many vegetables, most notably tomatoes. Its molecular structure is below. Does lycopene behave more like Vitamin A or Vitamin C, in terms of how our bodies absorb and store it?



- Vitamin C
- Vitamin A

2 6 points

How many Calories are in 90 grams protein?

3 6 points

Below is the label from a can of spray oil, like one would use to coat a pan before baking or cooking. Is this truly a zero calorie product?

Nutrition Facts	
Serving Size 1/3 second spray (0.25g)	
Servings Per Container About 557	
Amount Per Serving	
Calories 0	Calories from Fat 0
% Daily Value*	
Total Fat 0g	0%
Saturated Fat 0g	0%
Trans Fat 0g	
Polyunsaturated Fat 0g	
Monounsaturated Fat 0g	
Cholesterol 0mg	0%
Sodium 0mg	0%
Total Carbohydrate 0mg	0%
Protein 0g	
Not a significant source of dietary fiber, sugars, vitamin A, vitamin C, calcium, and iron.	
*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 2,400g 2,400g
Total Carb	300g 375g
Dietary Fiber	25g 30g

- No, there are a few fat calories, but the label rounded down.
- No, there is less than 1 Cal, so it is rounded down.
- Yes, this is made from Olestra
- Yes, the only calories are from fiber, which doesn't count

4 6 points

Match the mineral class to the mass units that best represent the necessary daily intake of that class.

Trace minerals

Macrominerals

Microminerals

5 6 points

Which of these pairs represent the same unit of mass?

- microgram, mg
- µg, mcg
- mg, mcg

6 6 points

Vitamins are generally divided into which two groups?

- Letter and Numeric
- Microminerals and Macrominerals
- Water soluble and fat soluble
- Lipids and triglycerides

7 8 points

Using the macronutrient info, how many Calories do you expect to see (per serving) for this product? Assume the dietary fiber does not add any Calories.

Nutrition Facts	
32 servings per container	
Serving size 1 1/4 cup (28g)	
Amount Per Serving	
Calories	
% Daily Value*	
Total Fat 8g	10%
Saturated Fat 1g	5%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 680mg	30%
Total Carbohydrate 23g	8%
Dietary Fiber 5g	18%
Total Sugars 4g	
Includes 5g Added Sugars	10%
Protein 5g	10%
Not a significant source of vitamin D, calcium, iron, and potassium	
*The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.	

8 6 points

How many grams of fat would you calculate to be in a serving of this product?

Nutrition Facts	
32 servings per container	
Serving size 1 1/4 cup (28g)	
Amount Per Serving	
Calories 130	
% Daily Value*	
Total Fat	
Saturated Fat	
Trans Fat	
Cholesterol 5mg	2%
Sodium 180mg	8%
Total Carbohydrate 18g	7%
Dietary Fiber 1g	4%
Total Sugars 12g	
Includes 12g Added Sugars	24%
Protein 1g	2%
Not a significant source of vitamin D, calcium, iron, and potassium	
*The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.	

9 4 points

What is/are the risks associated with using sucrose instead of glycerol to support the fatty acids and make a non-digestible monster fat (Olestra)?

- anal leakage
- abdominal cramping
- inhibition of vitamin absorption
- loose stools

10 6 points

Which functional group in sucrose allowed it to be used in place of glycerol to make Olestra?

- carboxylic acid
- amine
- phenyl
- alcohol

11 6 points

Nutrition Facts	
10 servings per container	
Serving size 1 oz (28g/about 12 pieces)	
Amount per serving	
Calories	
% Daily Value*	
Total Fat 8g	10%
Saturated Fat 2g	10%
Trans Fat 0g	
Polyunsaturated Fat 3g	
Monounsaturated Fat 2.5g	
Cholesterol 0mg	0%
Sodium 410mg	18%
Total Carbohydrate 17g	6%
Dietary Fiber 1g	4%
Total Sugars 1g	
Includes 0g Added Sugars	0%
Protein 2g	
Vitamin D 0mcg	0%
Calcium 8mg	0%
Iron 0mg	0%
Potassium 1mg	0%
*The % Daily Value tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.	

This is a nutrition label for a family size bag of chips from Walmart. How many Calories are found in 24 pieces (2 servings)?

12 5 points

Juliette is hoping to impress everyone with her pristine health after Lockdown 2.0. She realized that she feels best when she eats about 2200 Calories while exercising daily. Which ratio of macronutrients best gets her to 2200 Calories with a balance between fats, carbohydrates, and protein?

- 65 g fat, 275 g carbs, 109 g protein
- 100 g fat, 100 g carbs, 100 g protein
- 72 g fat, 265 g carbs, 123 g protein
- 50 g fat, 300 g carbs, 200 g protein
- 0 g fat, 250 g carbs, 300 g protein

13 5 points

You'll find below a simplified list of macronutrients in a few different foods/beverages. For each one, determine which macronutrient is contributing the most calories.

Plain Cheesecake Slice

Carbohydrates: 31 g

Fats: 15 g

Protein: 6 g

One Cup of Avocado

Carbohydrates: 12 g

Fats: 21 g

Protein: 2.9 g

Gin and Tonic

Carbohydrates: 12.1 g

Fats: 0 g

Protein: 0 g

Alcohol: 13.5 g

Margarita

Carbohydrates: 24 g

Fats: 0 g

Protein: 0 g

Alcohol: 13.5 g

Brisket with BBQ Sauce

Carbohydrates: 19 g

Fats: 41 g

Protein: 42 g

Plain Cheesecake Slice: . Avocado:

. Gin and Tonic: .

Margarita: . Brisket: .

14 6 points

A highly recommended and semi-budget-friendly wine is a Ramspeck Pinot Noir. This wine comes in at 13.5% ABV. Using the conversions provided, calculate the total grams of ethanol in 6 glasses of Ramspeck.

1 wine glass = 12 oz (yes, this is bigger than a "normal" glass of wine)

1 oz = 29.57 mL

density of ethanol = 0.789 g/mL

15 6 points

Isiah is reflecting on his diet and mental health during the first Lockdown. He mostly ordered out (especially taking advantage new Texas' wonderful booze-to-go laws) and this is what a day in the life looked like:

- 250 g carbohydrates
- 67 g fats
- 116 g protein
- But then on top of all this, he threw down 3 margaritas per night, each consisting of 12 g sugar and 13.5 g alcohol

Based on the total number of Calories he consumed, what percentage of his diet were the 3 margaritas he drank each night? Report your answer as a whole percent (round to the nearest percent).

16 6 points

The basic idea of distillation is that liquids can be separated based on...

- polarity
- charge balance
- texture
- boiling point

17 6 points

In a distillation of fermented mash, liquor distillers typically separate the first portion of distillate. The first portion...

- is too high in methanol content because methanol has a lower boiling point than ethanol
- is too high in ethanol content and must be discarded
- is too high in methanol content because methanol has a higher boiling point than ethanol
- is the most delicious, and distillers keep it for themselves.