

Name:

Using the following guide to build your energy bar:

Core -> Fruits -> Nuts -> Sweets -> Name

The energy bar must include:

- Core
- At least 1 fruit
- At least 1 nut
- At least 1 sweet

## ***Phase 1***

Choose one of the following types as the core for the energy bar:

- Chewy (muscle/strength)
  - Peanut butter or almond butter
- Oaty (heart)
- Fruit & Nut (heart)

Choose one or more of the following fruits:

- Cherries
- Cranberries
- Prunes
- Raisins
- Blueberries
- Apricots
- Bananas
- Coconut
- Apples

Choose one or more of the following nuts:

- Peanuts
- Almonds
- Flaxseeds
- Soynuts
- Walnuts
- Cashews
- Pumpkin seeds
- Chia seeds

Choose one or more of the following sweets:

- Brown rice syrup

- Agave syrup
- Honey maple syrup
- Fiber syrup
- Chocolate chips
- Sun drops
- Pumpkin spice
- Cinnamon

## ***Phase 2***

When choosing the ingredients you must consider four nutritional facts: calories, total fat, sugars, and proteins. There can be no more than 300 calories in the energy bar. The total fat + sugar amounts must be less than or equal to 30 grams. The amount of sugar + protein must be less than 24 grams. There must be at least 5 grams of protein.

Assign variables to the four (4) nutritional facts: calories, total fat, sugars, and proteins

Give four (4) inequalities that describe each of the constraints:

1)

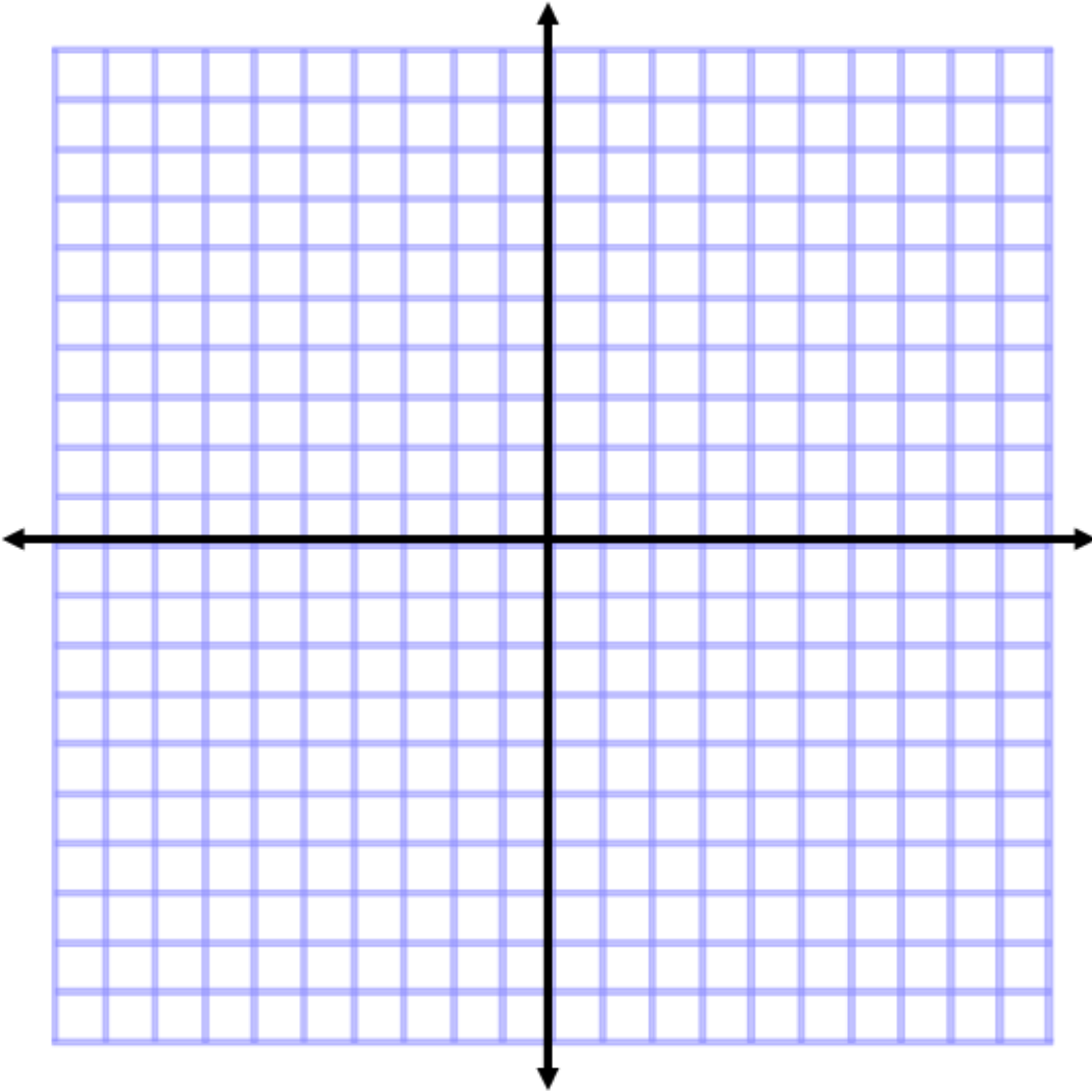
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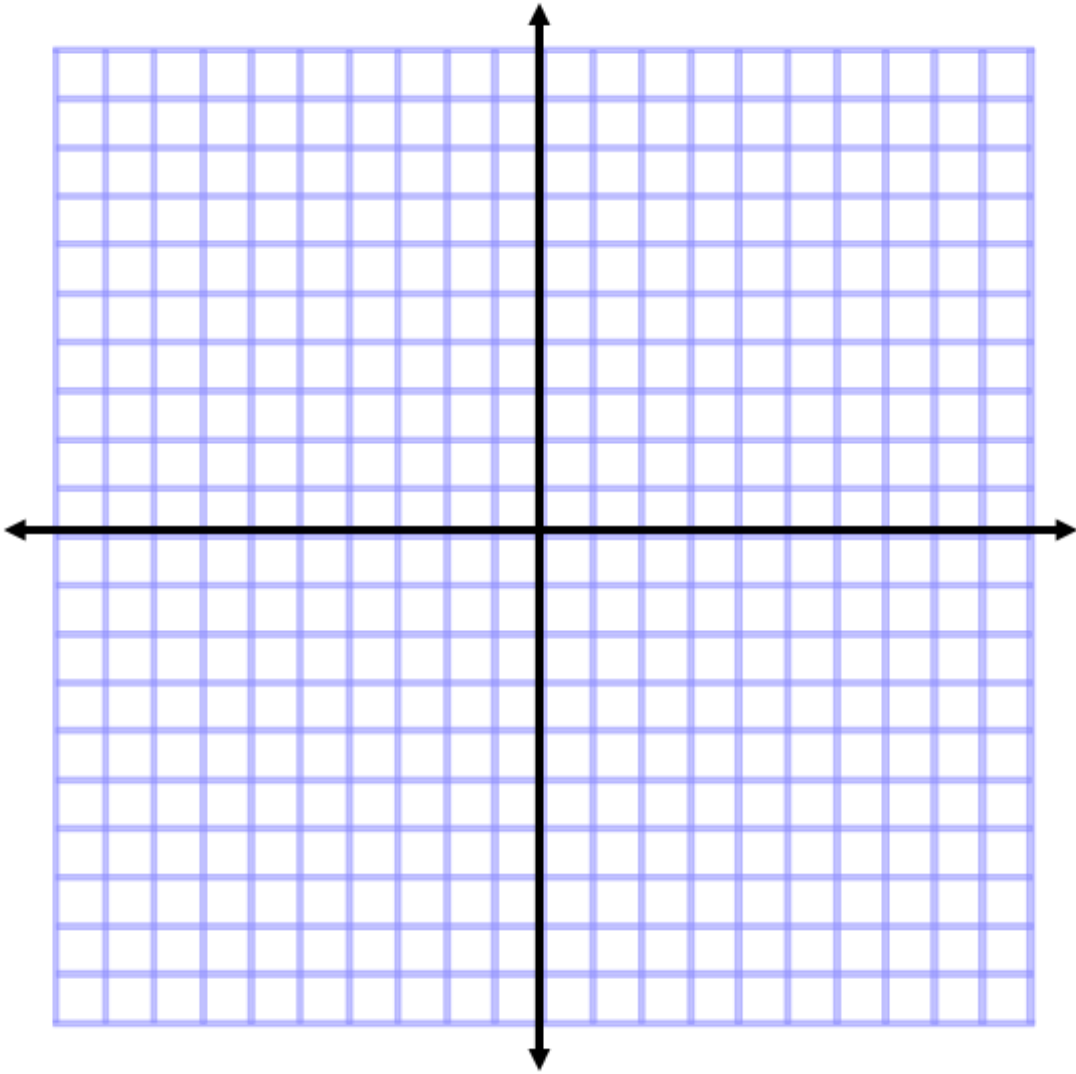
4)

Graph the feasible region of each constraint below:

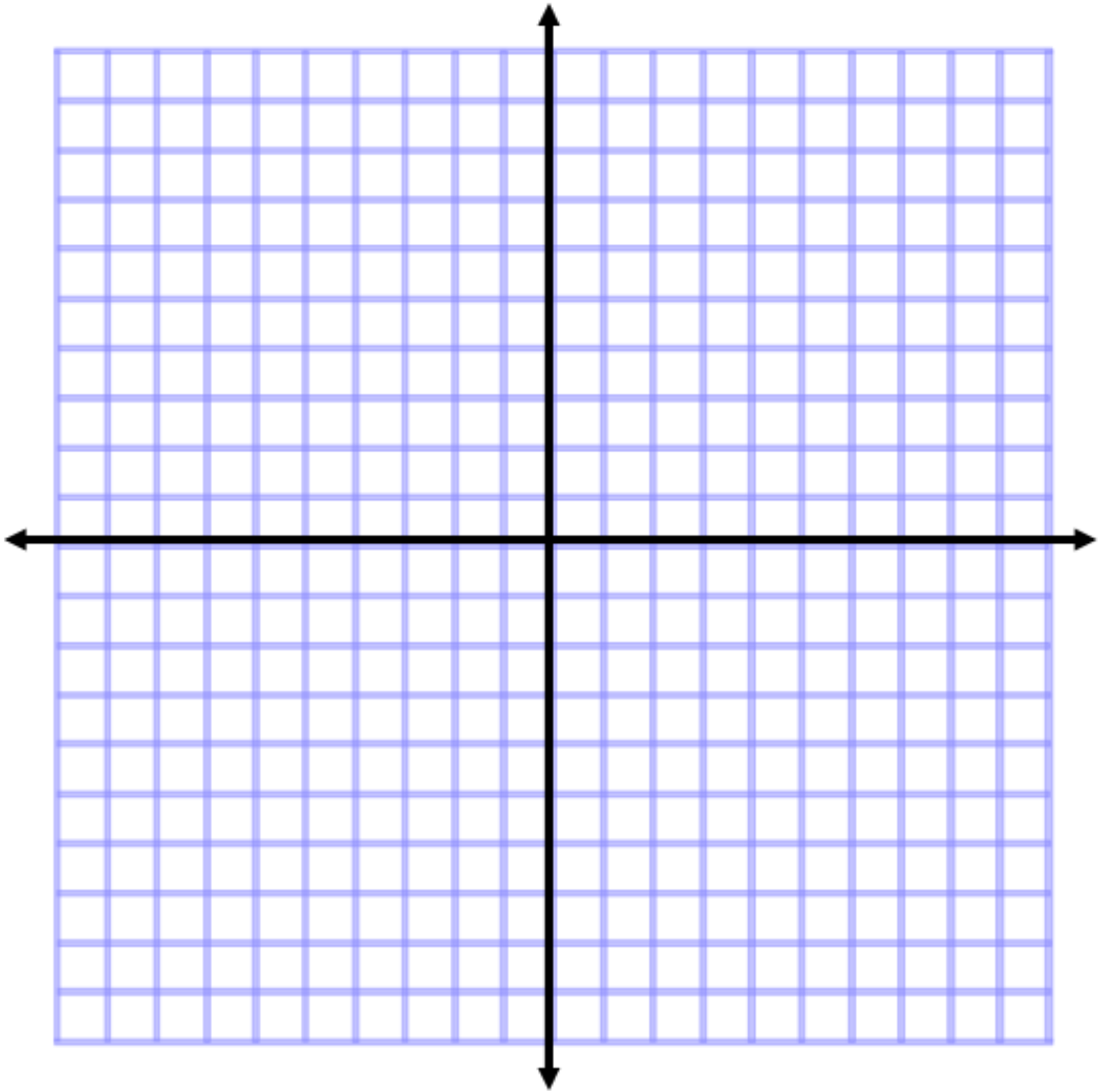
1)



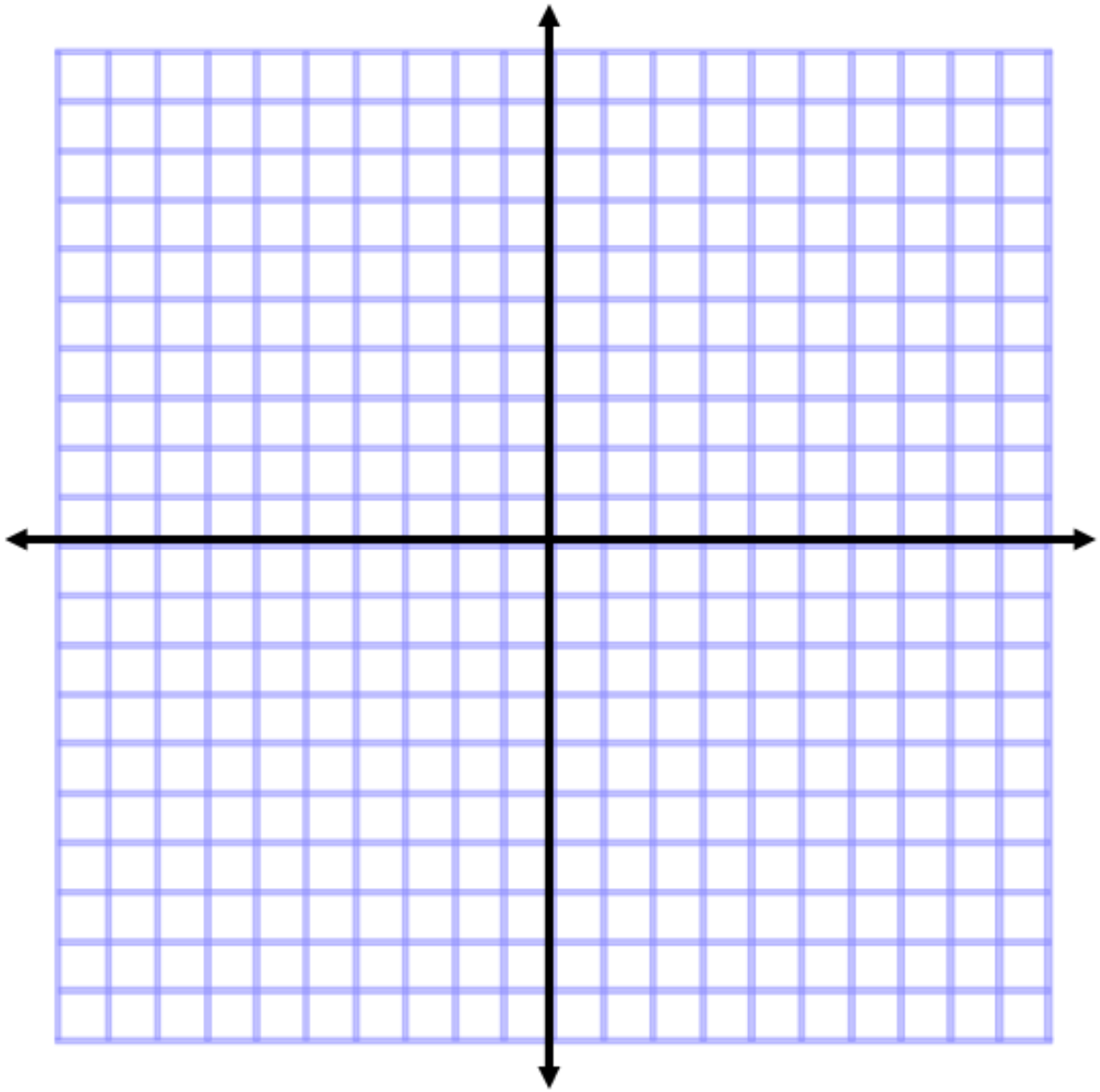
2)



3)



4)



### ***Phase 3***

Outline the ingredients of your energy bar using the following guide:

Core -> Fruits -> Nuts -> Sweets

**Core:**

**Fruits:**

**Nuts:**

**Sweets:**

**Name your energy bar:**