An exercise that suits my needs

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It is recommended that adults participate in regular physical activity because it will reduce the risk of health problems.

Choosing a physical activity can be complicated. Weight loss is usually the center of many fitness goals. Can you figure out which activities best suit a person’s characteristics and weight loss goal?

Once you establish some facts about the person, you will determine which exercises respond the person’s goal and justify your choice by making reference to your findings

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Section 1: Body facts

Fill out the information in the table for yourself or someone you know.

Gender:	
Age:	
Weight (pounds)	
Height (inches)	

Caloric Needs

Using the Harris Benedict Equation, you will calculate the **BMR** of your subject. Here are the two formulas:

Base Metabolic Rate (BMR) is the number of calories burned while resting for an entire day.

Let: ***"w"*** **= weight in pounds**
"h" **= height in inches**
"a" **= age in years**

Men	**BMR = 66 + 6.2w + 12.7h – 6.76a**
Women	**BMR = 655.1 + 4.35w + 4.7h – 4.7a**

1. a) Without calculation, can you predict whether men or women have higher caloric needs? Explain your prediction:

b) Which parts of the formula are always the same? Which parts can change depending on the person?

c) Is it possible for two different people to have the same BMR? Explain your thinking:

2. Determine the BMR for the person whose facts you listed in the table above.

BMR: _____

3.
a) How do you think gender affects BMR?_____ _____

_____

b) How can you test this?

_____

_____

c) Try your method. Does it support your guess?

_____

_____

4. Frequency of physical activity (Select one and take note of the Exercise Factor)
*Select the ***intended*** frequency rather than current frequency

Frequency (Exercise factor)	**Selection (✓)**
Light exercise 1-3 days **/ week (1.375)**	
Moderate exercise 4-5 days **/ week (1.55)**	
Hard exercise 6-7 days **/ week (1.7)**	

5. Choose <u>one</u> the following weight goals.

Goal	Daily Caloric adjustment	Selection (✓)
Weight Loss	decrease by 500	
Weight Maintenance	no adjustment	

6. To determine the daily caloric intake, we must multiply the BMR (Question 2) by the Exercise Factor (Question 4) and then adjust that number based on our goal (Question 5).

a) Declare variables and write a formula that will calculate the daily caloric need for your subject.

b) Apply your formula to determine the Daily Caloric Intake of your subject:

_____ **calories.**

c) Does your answer make sense? How can you be sure?

_____

_____

d) If we want to maintain or lose weight, how will our calories burned compare to the daily caloric intake?

_____

_____

e) Using these variables, create an algebraic model that determines a difference in calories when comparing caloric intake and calories burned.

Let: ***"i"*** **= daily caloric intake**
"c" **= difference in calories**
"b" **= calories burned**

f) For a person who wants to maintain their body weight, what does the algebraic model look like? Describe the relationship between each variable.

Section 2: Activity Preferences

1. Select <u>any</u> of these preferences that apply

Exercise types	Selection (✓)
Aerobic (endurance)	
Anaerobic (Strength)	
Flexibility	

Select preferred exercise locations	
Facility (eg: gym, community centre…)	
At Home	
Outdoors (eg: hills, trails, reserved paths…)	

Alone or in a Group (team)	
Alone	
Group	

Metabolic Equivalent of Task (MET)

measures how many calories are burned when performing the activity

http://prevention.sph.sc.edu/tools/docs/documents_compendium.pdf

Use resources available to you to find MET for different exercises.
Do you notice anything about the MET in relation to the type of exercise? What can you assume based on this?

_____

_____

_____

2. List 3 exercises that suit the selected preferences along with their MET

1. _____ **MET:**_____

2. _____ **MET:**_____

3. _____ **MET:**_____

Section 3: Targeting the goal

You will use this formula, calculate how many calories are burned for each exercise you chose.

Let: "T" = Total Calories Burned
"D" = Duration of the exercise (in minutes)
"M" = MET of the exercise
"K" = Weight in Kg

$$T = \frac{(3.5 \cdot D \cdot M \cdot K)}{200}$$

First convert the body weight into kg, considering that 50 pounds = 22.6796 kg

Weight in Kg (K):_____

Exercise 1:_____ Duration: _____ min / week

Calories burned / week

Exercise 2:_____ Duration: _____ min / week

Calories burned / week

Exercise 3:_____Duration: _____ min / week

Calories burned /

week

4. Look over your results from this section and select <u>one of your exercises</u> as the most suitable. Explain your choice:

Exercise: _____ Duration: _____min / week

_____

_____

_____

Create an exercise plan by indicating when it will be performed during the week. You can use the calendar provided or design one using a smart device.

Time	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
06:00-08:00							
08:00-10:00							
10:00-11:00							
11:00-12:00							
12:00-13:00							
13:00-14:00							
14:00-1500							
15:00-16:00							
16:00-17:00							
17:00-18:00							

18:00-19:00							
19:00-20:00							
20:00-21:00							
21:00-22:00							

Section 4: Re-evaluating Your Choice

1. How many pounds will be burned over a 4 week period if one pound of weight is the equivalent of 3 500 calories?

2. Does this result affect your choice of exercise? If so, what would you change?

_____

3.
a) If you were evaluating the goal of burning a set amount of calories each month by doing an activity, would there be a way to determine how many minutes you would need to perform that exercise? Explain your thinking:

_____

b) Declare variables, create a formula and see how you can use that formula. Afterwards, compare with another person.

4. How has algebra helped you throughout this task? If you had to repeat the task, what would you do differently?

_____

_____

_____