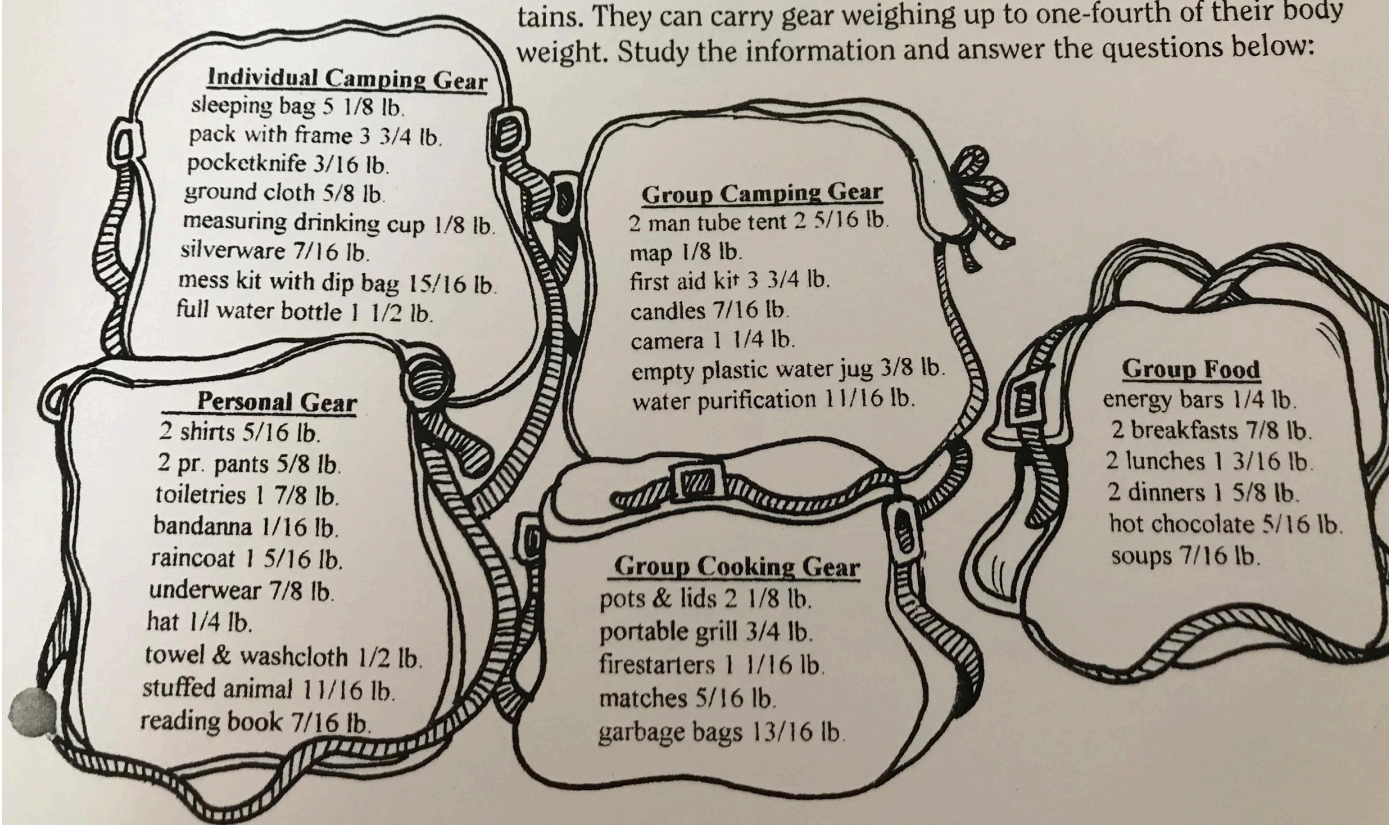


Name: _____ Team: _____

Three friends are planning a backpacking trip to the Smoky Mountains. They can carry gear weighing up to one-fourth of their body weight. Study the information and answer the questions below:



Individual Camping Gear

- sleeping bag $5 \frac{1}{8}$ lb.
- pack with frame $3 \frac{3}{4}$ lb.
- pocketknife $\frac{3}{16}$ lb.
- ground cloth $\frac{5}{8}$ lb.
- measuring drinking cup $\frac{1}{8}$ lb.
- silverware $\frac{7}{16}$ lb.
- mess kit with dip bag $\frac{15}{16}$ lb.
- full water bottle $1 \frac{1}{2}$ lb.

Group Camping Gear

- 2 man tube tent $2 \frac{5}{16}$ lb.
- map $\frac{1}{8}$ lb.
- first aid kit $3 \frac{3}{4}$ lb.
- candles $\frac{7}{16}$ lb.
- camera $1 \frac{1}{4}$ lb.
- empty plastic water jug $\frac{3}{8}$ lb.
- water purification $1 \frac{1}{16}$ lb.

Personal Gear

- 2 shirts $\frac{5}{16}$ lb.
- 2 pr. pants $\frac{5}{8}$ lb.
- toiletries $1 \frac{7}{8}$ lb.
- bandanna $\frac{1}{16}$ lb.
- raincoat $1 \frac{5}{16}$ lb.
- underwear $\frac{7}{8}$ lb.
- hat $\frac{1}{4}$ lb.
- towel & washcloth $\frac{1}{2}$ lb.
- stuffed animal $1 \frac{1}{16}$ lb.
- reading book $\frac{7}{16}$ lb.

Group Cooking Gear

- pots & lids $2 \frac{1}{8}$ lb.
- portable grill $\frac{3}{4}$ lb.
- firestarters $1 \frac{1}{16}$ lb.
- matches $\frac{5}{16}$ lb.
- garbage bags $\frac{13}{16}$ lb.

Group Food

- energy bars $\frac{1}{4}$ lb.
- 2 breakfasts $\frac{7}{8}$ lb.
- 2 lunches $1 \frac{3}{16}$ lb.
- 2 dinners $1 \frac{5}{8}$ lb.
- hot chocolate $\frac{5}{16}$ lb.
- soups $\frac{7}{16}$ lb.

1. Find the total weight for each of these categories of backpacking gear.

Use this information to answer all questions on the following page.

Show all work. Be sure to show it in an organized way.

In addition, be sure to explain your thinking when it is asked.

Name: _____ **Team:** _____

- 1) Find the total weight for each category of backpacking gear. Show your work.

Individual Camping Gear:

Personal Gear:

Group Camping Gear:

Group Cooking Gear:

Group Food:

- 2) Each of the three campers plan to carry their own individual and personal gear. They will then split up the group gear (group camping gear, group cooking gear, group food). The group gear does NOT need to be divided up equally. For safety reasons, each of the three campers can only carry up to $\frac{1}{4}$ of their body weight in their packs.

Camper's weights: Camper A (104 pounds) Camper B (123 pounds)

Camper C (98 pounds)

- a) What is the total number of pounds that each individual can carry in their pack? Show your work.

Camper A:

Camper B:

Camper C:

- b) How many pounds of the group gear can each individual carry? Remember that they will also be carrying their individual and personal gear. Show your work.

Camper A:

Camper B:

Camper C:

3) Together, will the campers be able to carry all of the group gear that is needed? If not, how much overweight is the group gear? Show your work and explain your reasoning.

4) If their packs will be overweight, what individual or personal item (or items) do you suggest that the campers leave behind so their packs will not be too heavy? Why did you pick these items? Show that they will now be able to carry all of the gear.