

Survivor is Back!!!

Survivor is back, but could you survive? You and 2 friends are on a mission to survive 3 days in the wilderness. You can each carry gear weighing up to $\frac{1}{4}$ of your individual body weights. The gear you can pack is listed below. Make a list of what each of you will carry on your trip, and the total amount each of you will carry. Remember, the more you bring, the more likely you will be to survive!

Note:

Your friend Tomika weighs 99 pounds.

Your friend Sam weighs 92 pounds.

“Pretend” you weigh 86 pounds.

Survivor is Back!!!

(page 2)

Individual Camping

sleeping bag	5 1/5 lb.
pack with frame	3 3/4 lbs
pocket knife	3/20 lb.
ground cloth	.625 lb.
measuring	
drinking cup	1/8 lb.
silverware	7/16 lb.
mess kit	
w/ dip bag	15/16 lb.
full water bottle	1 1/2 lb.

GearGroup Camping Gear

2-man tube tent	2 5/10 lbs.
map	1/8 lb
first aid kit	3.75 lbs.
candles	7/8 lb
camera	1.25 lb.
empty plastic	
water jug	3/8 lb.
water purification	.6875 lb.

Personal Gear

2 shirts	5/16 lb.
2 pr. pants	.625 lb.
toiletries	1 7/8 lb.
bandana	1/16 lb.
raincoat	1.3125 lbs
underwear	7/8 lb.
hat	.25 lb.
towel & washcloth	.5 lb.
stuffed animal	11/16 lb.
reading book	7/16 lb.

Group Cooking Gear

pots & lids	2.125 lb.
portable grill	3/4 lb.
fire-starters	1 1/16 lb.
matches	.3125 lb.
garbage bags	13/16 lb.

Group Food

energy bars	1/4 lb.
2 breakfasts	7/8 lb.
2 lunches	1 3/16 lb.
2 dinners	1.625 lb.
hot choc.	5/16 lb.
soup	.4375 lb.

Survivor is Back!!!

Suggested Grade Span

Grades 6–8

Grade(s) in Which Task Was Piloted

Grades 6–8

Task

Survivor is back, but could you survive? You and 2 friends are on a mission to survive 3 days in the wilderness. You can each carry gear weighing up to $\frac{1}{4}$ of your individual body weights. The gear you can pack is listed below. Make a list of what each of you will carry on your trip, and the total amount each of you will carry. Remember, the more you bring, the more likely you will be to survive!

Note: Your friend Tomika weighs 99 pounds.

Your friend Sam weighs 92 pounds.

“Pretend” you weigh 86 pounds.

Individual Camping Gear

sleeping bag	5 $\frac{1}{5}$ lb.
pack with frame	3 $\frac{3}{4}$ lbs
pocket knife	$\frac{3}{20}$ lb.
ground cloth	.625 lb.
measuring drinking cup	$\frac{1}{8}$ lb.
silverware	$\frac{7}{16}$ lb.
mess kit w/ dip bag	$\frac{15}{16}$ lb.
full water bottle	1 $\frac{1}{2}$ lb.

Group Camping Gear

2–man tube tent	2 $\frac{5}{10}$ lbs.
map	$\frac{1}{8}$ lb
first aid kit	3.75 lbs.
candles	$\frac{7}{8}$ lb
camera	1.25 lb.
empty plastic water jug	$\frac{3}{8}$ lb.
water purification	.6875 lb.

Personal Gear

2 shirts	$\frac{5}{16}$ lb.
2 pr. pants	.625 lb.
toiletries	1 $\frac{7}{8}$ lb.
bandana	$\frac{1}{16}$ lb.
raincoat	1.3125 lbs.
underwear	$\frac{7}{8}$ lb.
soup	.4375 lb.
hat	.25 lb.
towel & washcloth	.5 lb.
stuffed animal	$\frac{11}{16}$ lb.
reading book	$\frac{7}{16}$ lb.

Group Cooking Gear

pots & lids	2.125 lb.
portable grill	$\frac{3}{4}$ lb.
fire–starters	1 $\frac{1}{16}$ lb.
matches	.3125 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	1.625 lb.
hot choc.	$\frac{5}{16}$ lb.

Alternative Versions of Task

More Accessible Version:

Survivor is back, but could you survive? You and 2 friends are on a mission to survive 3 days in the wilderness. You can each carry gear weighing up to $\frac{1}{4}$ of your individual body weights. The gear you can pack is listed below. Make a list of what each of you will carry on your trip, and the total amount each of you will carry. Remember, the more you bring, the more likely you will be to survive!

Note: Your friend Tomika weighs 99 pounds.

Your friend Sam weighs 92 pounds.

“Pretend” you weigh 86 pounds.

Individual Camping Gear

sleeping bag	5.2 lb.
pack with frame	3.75 lbs
pocket knife	.15 lb.
ground cloth	.625 lb.
measuring drinking cup	.125 lb.
silverware	.4375 lb.
mess kit with dip bag	.9375 lb.
full water bottle	1.5 lb.

Group Camping Gear

2-man tube tent	2.5 lbs.
map	.125 lb
First aid kit	3.75 lbs.
candles .	875 lb
camera	1.25 lb.
empty plastic water jug	.375 lb.
water purification	.6875 lb.

Personal Gear

2 shirts	.3125 lb.
2 pr. pants	.625 lb.
toiletries	1.875 lb.
bandana	.0625 lb.
raincoat	1.3125 lbs.
underwear	.875lb.
hat	.25 lb.
towel & washcloth	.5 lb.
stuffed animal	.6875 lb.
reading book	.4375 lb.

Group Cooking Gear

pots & lids	2.125 lb.
portable grill	.75 lb.
fire-starters	1.0625 lb.
matches	.3125 lb.
garbage bags	.8125 lb.

Group Food

energy bars	.25 lb.
2 breakfasts	.875 lb.
2 lunches	1.1875lb.
2 dinners	1.625 lb.
hot choc.	.3125 lb.
soup	.4375 lb.

More Challenging Version:

The students who complete the task more quickly and easily could design and implement a follow-up survivor simulation for their classmates.

NCTM Content Standards and Evidence

Number and Operation Standard for Grades 6–8

Instructional programs from pre-kindergarten through grade 12 should enable all students to...

- Understand numbers, ways of representing numbers, relationships among numbers, and number systems.
 - **NCTM Evidence:** Work flexibly with fractions, decimals, and percents to solve problems.
 - **Exemplars Task Specific Evidence:** This task requires student to convert fractions and decimals, and then to perform computations with those results.

Time/Context/Qualifiers/Tip(s) From Piloting Teacher

This is a long length task. Students took the task very seriously as they knew as a culminating activity we would simulate the TV reality show *Survivor*. After completing the task, we put students in teams of 4 and simulated a stay on a remote island. Students had to keep track of their “points” as they ate and consumed water (subtracted items), and won challenges (added items). Challenges included memory competitions where pictures of camping items were viewed by the “contestants” for 30 seconds, and then the teams had to list all of the items they could remember. Teams earned “points” for each item they remembered. The possibilities for the simulation are limited only by your imagination.

Links

This task could link to other simulations such as colonists or westward-expansion. The following web site has a survivor simulation that students who are done the task can experience: <http://www.geocities.com/thesimssurvivor/>

Common Strategies Used to Solve This Task

First students divide to determine how much weight each person can carry. Most students will then convert all weights to decimals, and then use trial and error to find a list of needed items that do not exceed the totals.

Possible Solutions

Original Version:

Solutions will vary depending on what items students choose to bring. The student should demonstrate that Tomika does not carry more than 24.75 pounds, Sam does not carry more than 23 pounds, and that you do not carry more than 21.5 pounds. To check for accuracy in converting fractions to decimals, see the more accessible version of the task.

More Accessible Version:

See the solution to the original version.

More Challenging Version:

Not applicable

Task Specific Assessment Notes

General Notes

A great deal of computation is involved in this task. Students with the most success will have a very well organized approach. When assessing student work, remember that you are assessing mathematical components, and you do not need to focus on what items are brought as long as they stay within weight allowances.

Novice

The Novice will have little or no understanding of the mathematics in the task, and will not have an approach that will lead toward a solution. Little or no math language will be used to communicate. Little or no correct reasoning will be used.

Apprentice

The Apprentice will have only a partially correct solution. Errors may be made in computation, or omission and reasoning errors may lead to an incorrect solution. Some basic math language may be used. Some attempt at creating a math representation may be made.

Practitioner

A mathematically correct answer will be achieved. Work will be shown and accurate. Relevant observations will be made. An awareness of audience will be evident.

Expert

A mathematically correct answer will be achieved. Work will be shown, labeled, organized, and accurate. Math language and representations will be relied on to communicate the solution to the audience. The student will extend the solution beyond the task requirements.

MY SURVIVOR SOLUTION

No language of weight is used.

9:00 ~~am~~ wake up.
 10:00 ~~am~~ eat breakfasts,
 11:00 ~~am~~ go on hike
 12:00 ~~am~~ ↓
 1:00 ~~pm~~ eat lunch on hike,
 2:00 ~~pm~~ come back down,
 3:00 ~~pm~~ set up our sleeping stuff
 4:00 ~~pm~~ get prepared for dinner
 4:30 ~~pm~~ cook dinner,
 5:00 ~~pm~~ set table,
 6:00 ~~pm~~ eat dinner,
 7:00 ~~pm~~ get dress for bed,
 8:00 ~~pm~~ go to bed.
 We will do this the second
 day but go on a different
 trail. The third day is on the
 back.

No math representations
are attempted.

Novice cont.

Third Day

6:00 am - Get up

7:00 am - back bags

8:00 am Leave

↓ afternoon

night

↓ Middle of night

5:00 am the next day get home

And that's what we are doing.

The student does not understand the intent of the task, and no attempt is made to address weights of objects or people.

Exemplars

Apprentice

~~16.21~~
~~19.0~~
~~19.0~~
 Note: Your friend Tomika weighs 99 pounds.
 Your friend Sam weighs 92 pounds.
 "Pretend" you weigh 86 pounds.

Individual Camping Gear		Group Camping Gear	
M T sleeping bag	5 1/5 lb. 2	S 2-man tube tent	2 5/10 lbs. 2.5
M T pack with frame	3 3/4 lbs. 3.75	M map	1/8 lb. 13
T pocket knife	3/20 lb. S	first aid kit	3.75 lbs.
T ground cloth	.625 lb.	T candles	7/8 lb. 88
measuring drinking cup	1/8 lb. .13	camera	1.25 lb.
S silverware	7/16 lb. 14	empty plastic water jug	3/8 lb. .38
mess kit w/dip bag	15/16 lb. 91	water purification	.6875 lb.
full water bottle	1 1/2 lb. 1.5		

Personal Gear	Group Cooking Gear	Group Food
MST 2 shirts	5/16 lb.	<u>pots & lids</u> 2.125 lb. 102
MST 2 pr. pants	.625 lb.	portable grill 3/4 lb. 75
M toiletries	1 7/8 lb. 18	fire-starters 1 1/16 lb. 69
MST bandana	1/16 lb. 16	<u>matches</u> 3/25 lb.
MST raincoat	1.3125 lbs.	garbage bags 13/16 lb. 81
MST underwear	7/8 lb.	energy bars 1/4 lb. 25
MST hat	.25 lb.	2 breakfasts 7/8 lb. 88
T towel & washcloth	.5 lb.	2 lunches 1 3/16 lb. 1.19
stuffed animal	11/16 lb. 69	2 dinners 1.625 lb.
reading book	7/16 lb. 44	hot choc. 5/16 lb. ✓
		soup .4375 lb.

6.5275

65.75

Little math language is used.

Some fractions are converted incorrectly.

Exemplars

Apprentice cont.

The apprentice has a partially correct solution.

25	Sam	Tomika	'Me'
26	.88	.88	.88
27	1.19		1.19
28	1.63	1.63	1.63
29	.31	.31	.31

Item:	Sam	Tomika	"Me"
2	3.75	3.75	3.75
3		.15	
4		.63	
5	.44		
6		15x2	
7	2.5		
8			
9		2.75	.13 v
10		.88	
11			
12			.38
13	.31	.31	.31
14	.63	.63	.63
15			
16	.06	.06	1.88
17	1.31	1.31	1.31
18	.88	.88	.88
19		.5	
20	2.13		
21	.69		
22	.31		
23			.81
24	.5	.5	.5

The student's representation lacks labels and has confusing aspects.

The student does not show how much each survivor has the potential to carry.

Exemplars

Practitioner

Weight ÷ # = how much each person can carry

Note: Your friend Tomika weighs 99 pounds. $248 \text{ pounds} \div 10 = 23.833333$

Your friend Sam weighs 92 pounds. 23 pounds

"Pretend" you weigh 86 pounds. 21.6 pounds

	Individual Camping Gear	Group Camping Gear
	sleeping bag 5 1/5 lb. 5.2 lbs	2-man tube tent 2 5/10 lbs.
x 30	pack with frame 3 3/4 lbs. 3.75 lb	map 1/8 lb. $.125$
15x	pocket knife 3/20 lb. 15 lbs	first aid kit 3.75 lbs. ☺
x	ground cloth .625 lb.	candles 7/8 lb. 0
	measuring drinking cup 1/8 lb. $.125 \text{ lbs}$	camera 1.25 lb. ☺
x	silverware 7/16 lb. $.4375 \text{ lbs}$	empty plastic water jug 3/8 lb.
	mess kit w/dip bag 15/16 lb. $.9375$	water purification .6875 lb.
4.5 x	full water bottle 1 1/2 lb. 1.5 lbs	

Personal Gear	Group Cooking Gear	Group Food
2 shirts 5/16 lb. ☺	pots & lids 2.125 lb. ☺	energy bars 1/4 lb.
2 pr. pants .625 lb. ☺	portable grill 3/4 lb. ☺	2 breakfasts 7/8 lb.
toiletries 1 7/8 lb. 0	fire-starters 1 1/16 lb. ☺	2 lunches 1 3/16 lb.
bandana 1/16 lb. 0	matches .3125 lb.	2 dinners 1.625 lb.
raincoat 1.3125 lbs. ☺	garbage bags 13/16 lb.	hot choc. 5/16 lb.
underwear 7/8 lb. ☺		soup .4375 lb.
hat .25 lb. ☺		
towel & washcloth .5 lb. 0		
stuffed animal 11/16 lb.		
reading book 7/16 lb.		

Key
 ☺ what Tomika
 ☺ what Sam
 ☺ what you carry

Exemplars

Practitioner cont.

Mathematically correct answers are achieved.

Tomika to mika carries	total weight	Sam carries	total weight	I carry	total weight
3 sleeping bags 1 pocket knife 1 silverware 1 pack with frame 3 full water bottles	24.4375 lbs.	first aid kit 1 camera 1 pack with frame 3 shirts 3 pants 3 raincoats 5 under wear 3 hats 1 matches 1 pots + lids 1 portable grill	22.0625 lbs	toiletries 3 bandanas garbage bags 5 breakfasts 5 lunches 5 dinners 1 backpack with frames	21.0625 lbs.
how many things in all?					
9 things		21 things		21 things	

Work is shown and labeled.

Practitioner cont.

Explanation

First I figured out what are fourth of everybody's weight was by taking each person's weight and dividing it by four. Next I figured out who was going to carry what by picking items that were under the people weight. Then I took 1 person and added up all the weights of each item they were carrying. Next I added all the items to see how many items each was carrying.

The approach and reasoning are explained.

* I only picked the items that I needed

Practitioner cont.

Connection

I found a formula to how to figure out $\frac{1}{4}$ of each person's weight.

The formula is:

$\text{weight} \div 4 = \text{how much you can carry}$
(as in $\frac{1}{4}$)

This works because you are doing $\frac{1}{4}(4)$ of 1 person's body weight (weight) which gets you how much that person can carry

Math language and representations are used to communicate with the audience.

Exemplars

Expert

Note: Your friend Tomika weighs 99 pounds. $24 \text{ lbs. } 24.75$
 Your friend Sam weighs 92 pounds. 23
 "Pretend" you weigh 86 pounds. 21.5

Individual Camping Gear		Group Camping Gear	
5.2 sleeping bag	5 1/5 lb. $2\frac{1}{2}$	2.5 2-man tube tent	2 5/10 lbs. = $\frac{25}{10}$
3.75 pack with frame	3 3/4 lbs. = $\frac{15}{4}$.125 map	1/8 lb = $\frac{1}{8}$
.6 pocket knife	3/20 lb. = $\frac{3}{20}$	3.75 first aid kit	3.75 lbs. = $3 = \frac{3}{1}$
.625 ground cloth	.625 lb. = $\frac{5}{8}$	7/8 lb candles	7/8 lb
.125 measuring drinking cup	1/8 lb. = $\frac{1}{8}$	1.25 lb. camera	1.25 lb. $\frac{1}{4} = \frac{1}{4}$
4.375 silverware	7/16 lb. = $\frac{7}{16}$	1.25 empty plastic water jug	3/8 lb.
.9375 mess kit w/dip bag	15/16 lb. = $\frac{15}{16}$.375 water purification	.6875 lb. $\frac{6875}{10000}$
1.5 full water bottle	1 1/2 lb. = $\frac{3}{2}$		

Personal Gear	Group Cooking Gear	Group Food
2.25 shirts	5/16 lb. $\frac{5}{16}$	2.125 pots & lids
.625 pr. pants	.625 lb. $\frac{5}{8}$	2.125 portable grill
.625 toiletries	1 7/8 lb. $1\frac{7}{8}$	3/4 lb. $\frac{3}{4}$
1.875 bandana	1/16 lb. $\frac{1}{16}$	1 1/16 lb. fire-starters
.0625 raincoat	1.3125 lbs. $1\frac{5}{16}$	3125 lb. matches
1.3125 underwear	7/8 lb. $\frac{7}{8}$	garbage bags 13/16 lb.
.875 hat	.25 lb. $\frac{1}{4}$	
.25 towel & washcloth	.5 lb. $\frac{1}{2}$	energy bars 1/4 lb. $\frac{1}{4}$
.5 stuffed animal	11/16 lb. $\frac{11}{16}$	2 breakfasts 7/8 lb. $\frac{7}{8}$
.625 reading book	7/16 lb. $\frac{7}{16}$	2 lunches 1 3/16 lb. $1\frac{3}{16}$
		2 dinners 1.625 lb. $1\frac{5}{8}$
		hot choc. 5/16 lb. $\frac{5}{16}$
		soup .4375 lb. $\frac{7}{16}$

Exemplars

Expert

Work is shown, organized, and labeled.

please see redo work

Individual Camping Gear	original weight	converted weight
Sleeping bag	$5 \frac{1}{8}$ lbs	* 5.2 lbs
pack with frame	$3 \frac{3}{4}$ lbs	3.75 lbs
pocket knife	$\frac{3}{20}$ lbs	.15 lbs
ground cloth	.675 lbs	.625 lbs
cup	$\frac{1}{8}$ lbs	.125 lbs
silverware	$\frac{7}{16}$ lbs	.4375 lbs
mess kit	$\frac{15}{16}$ lbs	.9375 lbs
full water bottle	$1 \frac{1}{2}$ lbs	1.5 lbs
		Total: 12.725 lbs

Group Camping Gear	Original weight	converted weight
a man tube Tent	$2 \frac{5}{10}$ lbs	2.5 lbs
Map	$\frac{1}{8}$ lbs	.125 lbs
first aid kit	3.75 lbs	3.75 lbs
candles	$\frac{7}{8}$ lbs	.875 lbs
camera	1.25 lbs.	1.25 lbs
empty plastic water jug	$\frac{3}{8}$ lbs	.375 lbs
water purification	.6875 lbs	.6875 lbs
		Total: 9.5625

* I completed the weights to decimals to make it easier. I divided numerators by denominators.

Exemplars

Expert cont.

personal gear	original weight	converted weight
2 shirts	$5/16$ lbs	.3125 lbs
2 pr. pants	.625 lbs	.625 lbs
toiletries	$1\ 7/8$ lbs	1.875 lbs
bandana	$1/16$ lbs	.0625 lbs
rain coat	1.3125 lbs	1.3125 lbs
underwear	$7/8$ lbs	.875 lbs
hat	.25 lbs	.25 lbs
towel & washcloth	.5 lbs	.5 lbs
stuffed animal	$11/16$ lbs	.6875 lbs
reading book	$7/16$ lbs	.4375 lbs
		Total: 6.9402 lbs.

Group Cooking Gear	original weight	converted weight
pots & Lids	2.125 lbs.	2.125 lbs.
portable grill	$3/4$ lbs.	.75 lbs
fire-starters	$1\ 1/16$ lbs.	1.0625 lbs
matches	.3125 lbs.	.3125 lbs.
garbage bags	$13/16$ lbs	.8125 lbs
		- Total 5.0625 lbs.

Exemplars

Expert cont.

Group Food	original weight	converted weight
energy bars	$\frac{1}{4}$ lbs.	2.5 lbs
9 breakfasts	$\frac{7}{8}$ lbs.	3.9375 lbs.
9 dinners	1.625 lbs	7.3125 lbs.
9 Lunches	$1.3\frac{1}{16}$	5.34375 lbs.
Soup	.4375	.4375
hot chocolate	$\frac{5}{16}$.3125
		Total: 17.59

If each individual carried all the items listed for individual camping and personal gear, the total would be 19.667 pounds.

Group stuff totals to 32.25 lbs
So you cannot take everything.

The total all three people can carry is
69.25 lbs ($99 \div 4 + 92 \div 4 + 86 \div 4$)

I calculated the meals, I divided the original meal for 2 by 2 and then multiplied by 9 (3 people x 3 days.)

Expert cont.

My selection of gear to bring

Individual gear

✓ sleeping bag 5.2 Lbs.
 pack 3.75
 pocket knife .15
 cup .125
 silver ware .4375
 mess kit .9375
 ✓ water bottle 1.5

The student extends the solution beyond the task requirements.

New total : 12.125 Lbs.

Personal gear

1 shirt .15625 ($.3125 \div 2$)
 1 pr. pants .3125 ($.625 \div 2$)
 rain coat 1.3125
 underwear .875
 hat .25
 towel and wash cloth .5

New total : 3.40625 Lbs.
 New personal gear & individual gear
 total: 15.53125 Lbs.

Exemplars

Expert cont.

Tomika : 24.75 - Total P&T = 9.21875
Sam : 23 - total P&T = 7.46875
Me : 21.5 - total P&T = 5.96875
total that can be carried after
each camper carries pt & T gear
23.06

Group camping gear + group
cooking gear + group food = 32.215

Since 35.215 is more than 23.06
we have to take out some
stuff. We have to take
out 9.155 lbs. (32.215 -
23.06)

Things to leave behind

Soup	.4375
Hot chocolate	.3125
tent	2.5
camera	1.25
energy bars	.25
9 Lunches	5.34375
Total	10.09

Expert cont.

Connection

If each camper weighed 120 Lbs., they each could carry 30 Lbs, $(120 \div 4)$
 Their current carrying total is 69.25,
 So they can carry 20.75 Lbs more.
 $(90 - 69.25)$

Here is some new equipment and food we could carry.

item	weight
radio	2.75 Lbs.
flares	.8095 Lbs.
9 lunches	5.34375 Lbs.
journal	.3335 Lbs.
alarm clock	.87525
2 tents	5 Lbs.
book	1.357 Lbs.
flashlight	.6259 Lbs.
	Total: 17.0949

Exemplars

Expert cont.

What each person carries (5)

Tomika
see (4)

Sam
see (4)

Me
2 man tube tent 2.5
pots and lids 2.125
fire-starters .6875

~~sleeping bag~~
~~pack~~
~~pocket knife .75~~
~~cup .15~~
~~shovel .26~~
~~mess kit .4375~~
~~water bottle .75~~
~~see (4)~~
~~cardles .875~~
A 87

Exemplars

The student identifies his/her own errors and makes adjustments along the way.

Expert cont.

red one correctly

Based on page ④, each person will carry 15.53125 lbs., so Tomika can carry 9.22 more, Sam can carry 7.47 more, and I can carry 5.97 more.

Here is what we'll carry:

Tomika	Sam	Me
page ④'s P&I	page ④ P&I	page ④'s P&I
3 B 1.3125	fire stoves 1.06	grill .75
3 L 1.785	3 B 1.3125	✓ Matches .3125
pots & lids 2.125	3 L 1.785	3 Breakfasts 1.3125
First aid 3.75	water p. .685	3 Lunches 1.78125
map .125	energy bars .75	✓ candles .875
Total: 9.09	candles .835	water purification .6875
	matches .3125	energy bars .25
	water jug .375	Total: 5.97
	Soup .4375	
	Total 7.04	My total: 2150725

Connection

If everyone weighed 120, they each could carry a total of 30 lbs., and carry a remainder of 14.47 lbs of group gear.

Exemplars

Expert cont.

Connection additional items
to be carried

Tomika	Sam	Me
$(14.47 - 9.22 = 5.25$ more she can carry.) Tent 2.5 Matches .3125 fire starters .625 2 dinners 1.625	$(14.47 - 17.47 = 7$ more He can carry) first aid 3.75 5 dinners 2.4375 map .125	$(14.47 - 5.97 = 8.5$ more I can carry) first aid 3.75 pots & lids 2.125 3 dinners 2.4375 map .125 Total 8.44

A correct, mathematically supported solution is achieved.