

Name: _____ Section: _____

Practice for Exam2 - I/O/if/while/for/vectors/rand/round

You are done with college, and it's time to move all your stuff out!!!!

**NO QUESTIONS ANSWERED
DURING EXAM. DO YOUR BEST.
COMMENT OUT, AND MOVE ON!**

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** so you're moving I hear! **

How many trips do you plan on doing? (whole>2): 1.1
ERROR: (try again): 2.2
ERROR: (try again): 3

Which type of truck do you want to use?
Renting Truck Options:
(1) - 10ft
(2) - 15ft
(3) - 24ft
--> 2.2
ERROR: 1-2-3 only. Try again: 1.1
ERROR: 1-2-3 only. Try again: 1

CAUTION: You can only load 2810lbs & 402ft^3 each trip with this truck.

Trip #1:
You are loading 174 (ft^3) on this trip.
How much did this weigh (lbs)? 4321
CAUTION: overloaded on this trip

Trip #2:
You are loading 381 (ft^3) on this trip.
How much did this weigh (lbs)? 2333.23

Trip #3:
You are loading 206 (ft^3) on this trip.
How much did this weigh (lbs)? 4234.32
CAUTION: overloaded on this trip

Those 3 trips moved out 761ft^3 with a mass of 10888.55 (lbs).
--> You overloaded 2 times, consider doing 4 trips!
>>
```

Three types of trucks are available for rental, with the following characteristics:

Truck Option	Max Load (lbs)	Max Capacity (ft ³)
1 - 10ft	2810	402
2 - 15ft	6190	733
3 - 24ft	6500	1418

In case more truck options become available, you shall use 2 vector databases: one for the max loads, another for the capacities. (*The programmer will add more truck options, and update the prompt, but NOTHING else in the code must change!!!*).

The user will indicate how many trips (>2) and which truck option they want. TRAP USER.

A general caution message should indicate the maximum load and capacity of the truck chosen. (*DO NOT USE IF here.*)

From there, use the most efficient loop to:

- Indicate the trip's number
- Generate/display a capacity moved out during that trip. This should be a random integer between 100 and the max capacity of the chosen truck (both included).
- Ask the user how much this capacity weighed (lbs). DO NOT TRAP, but indicate if this is considered overload.
- Count the overloads.
- Using running totals, add up the loads and the capacities..

Indicate a summary when done: number of trips, total loads, and total capacities.

If overloading did happen, indicate how many times, then calculate and indicate how many trucks (whole number) would be better to avoid the overload!

Please cross check!

- | | |
|--|-----|
| <input type="checkbox"/> Intro | 3 |
| <input type="checkbox"/> Clean ups | 4 |
| <input type="checkbox"/> Algorithm | 5 |
| <input type="checkbox"/> Spacing/Indent | 5 |
| <input type="checkbox"/> Semi-colons | 2.5 |
| <input type="checkbox"/> Human Factor | 2.5 |
| | |
| <input type="checkbox"/> Intro to user | 2 |
| <input type="checkbox"/> Prompt, validate | 10 |
| <input type="checkbox"/> Databases | 5 |
| <input type="checkbox"/> Displays | 7 |
| <input type="checkbox"/> Appropriate loop | 5 |
| <input type="checkbox"/> Trip number | 2 |
| <input type="checkbox"/> Random capacity/display | 5 |
| <input type="checkbox"/> Prompt weight | 2 |
| <input type="checkbox"/> Caution | 5 |
| <input type="checkbox"/> Running totals | 10 |
| <input type="checkbox"/> Final display | 5 |
| <input type="checkbox"/> number extra trips | 5+5 |
| <input type="checkbox"/> IF | 5 |
| | |
| <input type="checkbox"/> 7c: Testing: each piece counts! You must show me each loop works. | 5 |

Extra Credit (+3)

Explain the 4 most common placeholders taught up till today, and describe what type of value each one is for?