Area Contractor

NAME _____

Every summer the building engineers refinish the floors, paint, and repair classrooms as needed. We have been asked to help out the engineers by calculating the net area of this classroom's floors and walls. You will measure the room in groups of three, and then make a presentation to the class.

Task Assignments

Each group member will focus on one task to be completed. Circle the role you were assigned.

TEAM LEADER	Acts as project manager ensuring all work is completed and team members remain on task; provides assistance, as needed, to other team members.
RECORDER	Responsible for documenting results, coordinating the presentation, and acting as spokesperson for the group. Consider this person the operations manager.
RESOURCES	Responsible for obtaining all materials needed to complete the project and returning materials upon completion. Consider this person the supply officer.

Measurement Assignments

Each group member will measure a different part of the room. Circle the role you were assigned.

MEMBER A	Measure the floor and help measure walls as determined by your Team Leader. Assume all furniture will be removed from the room, so there is no need to deduct for furniture obstructions. You do need to deduct for permanent cabinets and fixtures.
MEMBER B	Measure the gross area of the walls and with assistance from Member A.
MEMBER C	Measure the obstructions such as doors, windows, and chalkboards. Your measurements will be subtracted from the gross measurements of the surfaces.

Part 1: Estimation

Each person must first estimate their assigned surface area using reference points found in the classroom. Measurements should be accurate within ± 1 ft and rounded to the nearest foot. Record your estimated measurements in the left-hand side of each table below.

Gross surface area does not have any deductions for obstructions.

SURFACES	ESTIMATED MEASUREMENTS			ACTUAL MEASUREMENTS		
	LENGTH	WIDTH	AREA (FT^2)	LENGTH	WIDTH	AREA (FT^2)
FLOOR						
WALL 1						
WALL 2						
WALL 3						
WALL 4						
ESTIMATED GROSS AREA				ACTUAL GROSS AREA		

Obstructions include any permanent fixtures that cannot be removed from the room. The table contains possible obstructions in the room. Enter other obstructions into the table as needed.

Obstructions	Estimated Measurements			Actual Measurements		
	Length	Width	Area (ft^2)	Length	Width	Area (ft^2)
Doors						
Windows						
Chalk/Whiteboards						
Cabinets						
Other						

Finally, obstructions are subtracted from the gross surface area of the respective surface. Net surface area is gross area minus obstruction area.

Surfaces Without Obstructions	Estimated Measurements			Actual Measurements		
	Length	Width	Area (ft^2)	Length	Width	Area (ft^2)
Floor						
Wall 1						
Wall 2						
Wall 3						
Wall 4						
Estimated Net Area				Actual Net Area		

Part 2: Accurate Measurement

Using a measuring tape, find the actual areas of the surfaces in the room. Measurements should be accurate within ± 1 in and rounded to the nearest inch. Record your actual measurements in the right-hand side of each table above.

Presentation

Please include the following in your presentation to the class:

- Your square footage for each surface based on estimation rounded to the nearest foot (Note what reference points were used for estimation.)
- Your actual square footage for each surface rounded to the nearest inch
- A list of obstructions that were deducted from your measurements and why
- A comparison between your estimate and your actual measurements

Be prepared to discuss the following questions:

- What could account for the differences between the estimated and the actual measurement if the difference is significant (significant is defined as more than $\pm$ 10%)?
- Is it better to use estimation or actual measurements for this type of project? Why?