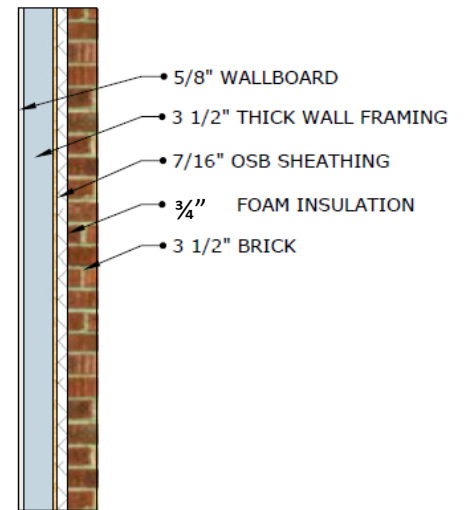Name _____

Score: out of 230

Directions: To receive FULL CREDIT, you must:

- Show calculations supporting your answer (show the math you did with your calculator).
- Be sure to show your work in a way that the instructor can follow/see what you did
- Include units in all answers.
- Circle your answer when done.

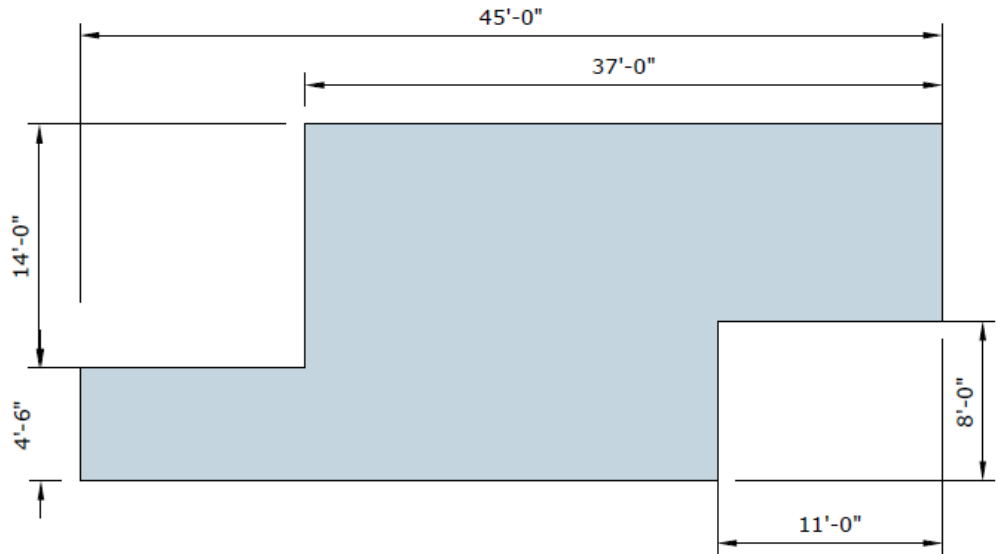CALCULATOR OKAY on ALL problems:

> Each problem (except the bonus problem, which is worth 10) is worth 15 points

1. What is the thickness of the wall assembly shown?

- 5/8" WALLBOARD
- 3 1/2" THICK WALL FRAMING
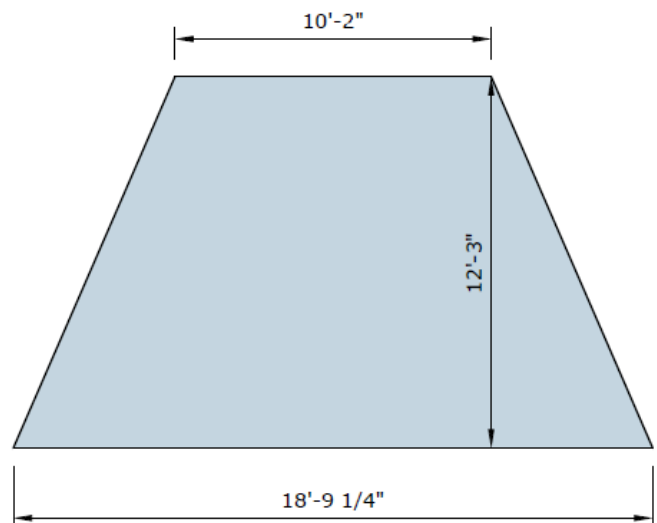- 7/16" OSB SHEATHING
- ¾" FOAM INSULATION
- 3 1/2" BRICK

2. A contract is accepted for $25,050.00. The total cost of material and labor is $21,703.79. How much is the profit on the contract?

3. A general contractor estimates a nonresidential building to cost $125,860. If the work of excavating and grading is 3% of this amount, the concrete work is 20%, and the carpentry is 9%, determine the amount estimated for excavating and grading.
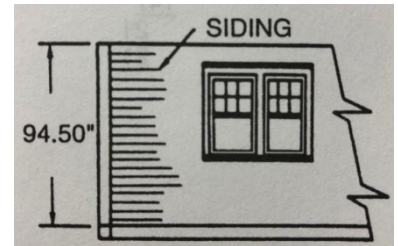
4. Find the perimeter of the house footprint below

5. A line is drawn so that ½ inch represents 1 foot. How many feet are represented by a line 6 inches long?

6. Determine the surface area of the concrete slab shown below. Round your answer to one decimal place.

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7. In the illustration, each course of siding is equally exposed to the weather. If you are using 5 ¼"
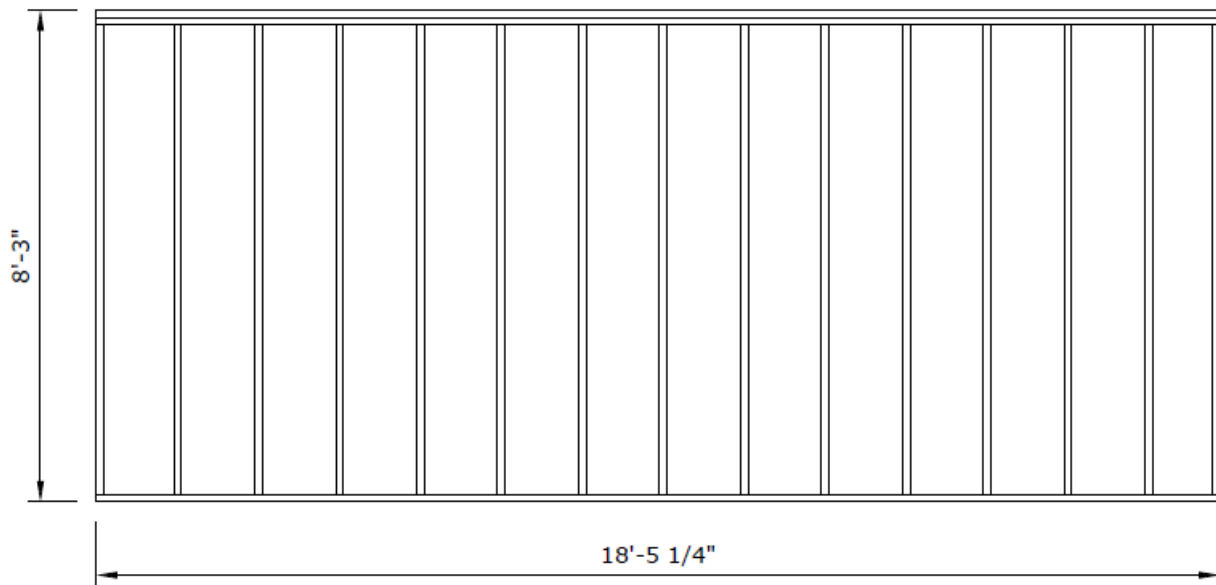   siding and the overlap must be between 1" and 2"

   a. How many courses of siding are needed?

   b. How many inches on each piece of siding are exposed to the weather (what is the
      reveal)?

8. How many square feet of floor underlayment should be ordered for a job when the area of the
   floor is 1,340 square feet and 15% of the area is allowed for waste?

9. If the floor underlayment in the question above comes in rolls of 100 square feet and costs 49
   cents per square foot ($48.98/roll), determine how much you'll spend on the underlayment.
   Assume you pay 5.5% tax.

10. When laying 2 ½ inch wide flooring in a 15-foot by 17-foot room, how many courses will be
    required for the 15-foot width?

11. A contractor orders material that costs $1,926.90. They will receive a 3% discount if paid in full
    within 30 days. How much is due if the bill is paid 10 days after ordering?

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12. Plywood is used as sheathing for the exterior walls of a home that measures 26 feet by 46 feet by 8 feet. How many 4 x 8 foot sheets of ½ inch plywood are needed?
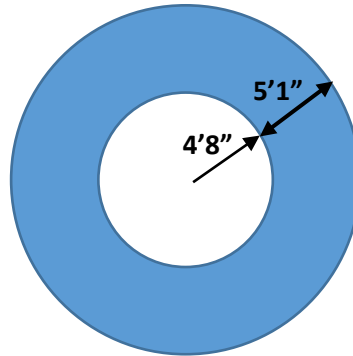
13. You are trying to determine if this wall you framed is square. What would the diagonal measurements be if it were square? *Show or explain how you found your answer.*

8'-3"

18'-5 1/4"

14. Using the image from the question above, estimate the area of the wall (use a method that you can do in your head). *Explain your process and provide your answer below*

DO ONLY ONE OF THE PROBLEMS BELOW. IF YOU DO BOTH, THE ONE WITH THE LOWER SCORE WILL COUNTS AS A BONUS

15. What is the area of the shaded section in the image below? Round your answer to 1 decimal place.

15. How many cubic yards of concrete are needed for the foundation wall and footing shown in the image below?

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