

Geometry Honors House Flip Project

You just bought a house for \$180,000! The floor plan is shown on the next page.

You plan on remodeling the house and then selling it for a profit.

You expect to complete the following projects:

- Part I: Install hardwood floors in the kitchen, living room, and master bedroom
- Part II: Re-paint the kitchen, living room, and the three bedrooms
- Part III: Install new air conditioning units in the bedroom, living room, and kitchen.

Continue through the pages of this project to estimate your costs and determine the price you should list the house to achieve your desired profit.

Round all dollar amounts *up* to the next penny (e.g., \$10.243 would round *up* to \$10.25).

It is worth 50 points total.

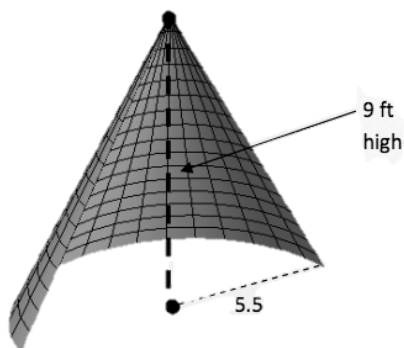
Due date: _____

Date:

All dimensions are in feet.



Kitchen Half-Cone Ceiling:



Names:

Date:

Geometry
Installing Hardwood Floors

You have three choices for hardwood floors:

- White Oak: \$2.60 per square foot
- Maple: \$3.00 per square foot
- Golden Teak: \$6.00 per square foot

Remember, you are installing hardwood floors in the kitchen, living room, and master bedroom.

1. Choose your favorite flooring from above. _____
2. Determine the square footage of the three rooms (use the π button for area of the kitchen and round the *final answer only* to two decimal places). (6 points– 2 for each room)
3. Determine the amount that you'll need to spend on hardwood floors. (2 points)
4. You'll need to buy a little extra because the kitchen and living room aren't perfectly rectangular, and after installing the floors you'll end up with some scrap pieces of flooring. Tack on an extra 15% to the cost to be safe. (2 points)

Use the space below (attach an additional page if necessary) to complete this estimate. You should *draw diagrams* and *explain/label each step clearly* (for example, "Trapezoid– A Section of the Living Room"). Label or explain all *equations* used.

Names:

Date:

Geometry
Painting

You are going to paint all the walls in the kitchen, living room, and the three bedrooms. Each wall is 9 feet high.

The *spaces* in the floor plan are for doors, which you are *not* painting. Each door is 2 feet wide by 7 feet tall. You decide to paint the ceiling the same color as the walls for this flip.

Additionally, you are going to paint the pyramid-shaped ceiling above the master bedroom and the half-cone-shaped ceiling above a section of the kitchen. The paint costs \$25 per gallon. One gallon will cover about 350 square feet.

1. Determine the area of the walls you will paint. (Again, use the π button for the kitchen and round the *final answer only* to two decimal places.) (10 points)
2. Determine the surface area of the pyramid-shaped ceiling above the master bedroom. (Diagram shown on page 2.) (2 points)
3. Determine the surface area of the half-cone-shaped ceiling above the kitchen. (Diagram shown on page 2. Use the π button on your calculator and round the *final answer only* to two decimal places.) (2 points)
4. Determine how many gallons of paint you will need. Round *up* to the next half-gallon (e.g., 10.234 gal. would round *up* to 10.5 gal.). (3 points)
5. Determine the cost of painting. (1 point)

Again, you should *draw diagrams* and *explain/label* each step clearly. Label or explain all *equations* used.

Names:

Date:

Geometry

Air Conditioning

This house does not have a central air-conditioning system. You want to install one wall air-conditioning unit in the master bedroom, another in the living room, and a third in the kitchen. You have four choices for an air conditioning unit:

- A \$50 unit designed to cool 1,000 cubic feet of space
 - A \$100 unit designed to cool 2,000 cubic feet of space
 - A \$150 unit designed to cool 3,000 cubic feet of space
 - A \$300 unit designed to cool 4,000 cubic feet of space
1. Determine the volume of the master bedroom. Don't forget to add in the pyramid-shaped ceiling. (4 points)
 2. Determine the volume of the living room. (4 points)
 3. Determine the volume of the kitchen. Don't forget to add in the half-cone-shaped ceiling. (4 points)
 4. Choose the appropriate air conditioning unit for each room. You don't want to spend more than you have to. (1 point)

Again, you should *draw diagrams* and *explain/label each step clearly*. Label or explain all *equations* used.

Names:

Date:

Geometry

Sell This House

1. Determine how much this house has cost you altogether including the original purchase price of the house and all the updates. (2 points)
2. The closing costs on the house that you have to pay (lawyer fees, real estate fees, title, loan applications, and escrow) will run around \$10,000. After all these costs, you want to make a 20% profit on the sale of this house. Determine the price you need to sell the house for in order to achieve your desired profit. (3 points)
3. If houses in this area normally sell for 15% below the asking price, how much should you ask for this house? (In other words, what higher price should your real estate agent list your house on the market so that you actually get the price you want from #2 above?) Round to the nearest \$1000. (2 points)

Again, you should *draw diagrams* and *explain/label each step clearly*. Label or explain all *equations* used.