# AIR CONDITIONING WORKSHEET

READ INSTRUCTIONS FIRST:
You will calculate the volume of your house to find out how many air conditioning units will be needed to cool it. To do this, you will need the formula for the volume of a prism.

$V =$ where $\boldsymbol{B}$ equals _____. You will need to use your Concrete Foundation worksheet to find the area of the "base," which is the area of the rooms on your floor plan. Do not include the garage since it will not need to be air conditioned.

| Story | Room | Shape of Polyhedron | Area of the Base: $\boldsymbol{B}$ | Height: $\boldsymbol{h}$ (Ceiling height or stud height) | Volume in $ft^3$ |
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Attach an additional sheet if necessary.

Total Volume of House:

Now that you have the total volume of your house, you must find how many tons of cooling you will need. Air conditioning condensers are categorized by tons and BTU's. For this project we will focus on the tons. Each ton cools approximately 4,000 cubic feet. That means you must divide your house's total volume by 4,000 to determine how many tons to buy.

| | |
|---|---|
| Total Volume | |
| Divide by 4,000 $ft^3$ per ton | ÷ 4,000 |
| Total Tons Needed | |

Now search for air conditioning condensers online or in the Home Depot catalog. The maximum sized unit is 5 tons so you may need more than one condenser. For houses with large volumes, it is wise and efficient to have more than one unit that can handle slightly more tons than you need instead of a single condenser running at full capacity. Once you find the condensers you need, record them in your budget outline with appropriate descriptions and prices.