

Section I – Percentages

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1. 7 is what percent of 17.5?
2. 87 is 8% of what number?
3. 67 is what percent of 134?
4. 37 is 12% of what number?
5. 13 is what percent of 65?
6. 87 is what percent of 1740?
7. 31 is what percent of 62?
8. 37 is 15% of what number?

Section II – Blueprint Calculations

9. Shape C, Scale = 15, pipe job.

13. Shape G, Scale = 15, baseboard job.

10. Shape C, Scale = 8, brick job.

14. Shape L, Scale = 35, brick job.

11. Shape E, Scale = 30, baseboard job.

15. Shape K, Scale = 30, tile job.

12. Shape J, Scale = 8, brick job.

16. Shape N, Scale = 48, tile job.

Section III – Carbon Footprint

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17. Ammonia, 176oF cycle, 763 (lb/hr) flowrate, outside is 75°F, inside 76°F?
21. n-Butane, 32oF cycle, 1299 (lb/hr) flowrate, outside is 43°F, inside 88°F?
18. How many mmBTUs are generated by burning 173 pounds of Basswood?
22. Room C's 4 Walls, made of Earth, dry, if inside is 72°F and outside is 5°F?
19. Room B's Wall #3, made of Fiber hardboard, if inside is 61°F and outside is 83°F?
23. How many mmBTUs are generated by running a EVG 220 for 5 days?
20. Glycerine cycle, 813 (lb/hr) flowrate, outside is 54°F, inside 81°F?
24. How many pounds of CO2 are released by burning 129 pounds of Red Maple?

Section IV – Green Building

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25. Room B's Floor, made of Timber, walnut, if inside is 70°F and outside is 53°F? 29 How many mmBTUs are generated by running a ET 150-H for 3 hours?
26. How many pounds of CO₂ are released by burning diesel fuel for 5 days in a CGa-3? 30 Room B's 4 Walls, made of Plaster, wood lath, if inside is 57°F and outside is 9°F?
27. Acetone cycle, 1239 (lb/hr) flowrate, outside is 74°F, inside 45°F? 31 How many mmBTUs are generated by burning 271 pounds of Cherry?
28. How many pounds of CO₂ are released by burning butane for 10 weeks in a ET 150-H? 32 Ethylene glycol cycle, 1199 (lb/hr) flowrate, outside is 80°F, inside 83°F?