

## Section I – Percentages

**214**

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1. 87 is what percent of 271.875?
2. 37 is 24% of what number?
3. 57 is what percent of 285?
4. 71 is 32% of what number?
5. What is 15% of 290.625?
6. What is 96% of 1860?
7. What is 24% of 228.125?
8. 93 is what percent of 1162.5?

## Section II – Blueprint Calculations

9. Shape E, Scale = 36, tile job.

13. Shape J, Scale = 35, brick job.

10. Shape E, Scale = 32, molding job.

14. Shape R, Scale = 35, molding job.

11. Shape D, Scale = 50, baseboard job.

15. Shape K, Scale = 35, molding job.

12. Shape H, Scale = 36, wire job.

16. Shape O, Scale = 48, wire job.

## Section III – Carbon Footprint

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17. Room A's Wall #1, made of Earth, dry, if inside is 68°F and outside is 52°F?
- 21 Room B's Ceiling, made of Timber, walnut, if inside is 83°F and outside is 71°F?
18. How many pounds of CO<sub>2</sub> are released by burning diesel fuel for 1 hours in a EG-30?
- 22 How many pounds of CO<sub>2</sub> are released by burning 164 pounds of White Ash?
19. Room A's Wall #4, made of Ground or soil, very dry area, if inside is 68°F and outside is 24°F?
- 23 How many pounds of CO<sub>2</sub> are released by burning Anthracite coal for 6 hours in a CGI-5?
20. Ammonia, 212oF cycle, 1337 (lb/hr) flowrate, outside is 46°F, inside 80°F?
- 24 Room C's Wall #1, made of Sawdust, if inside is 63°F and outside is 30°F?

## Section IV – Green Building

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25. How many mmBTUs are generated by burning 59 pounds of Black Spruce?
29. How many pounds of CO<sub>2</sub> are released by burning 59 pounds of Hemlock?
26. Ethyl ether cycle, 876 (lb/hr) flowrate, outside is 57°F, inside 83°F?
30. Acetone cycle, 987 (lb/hr) flowrate, outside is 90°F, inside 72°F?
27. Water, sea 360°F cycle, 1493 (lb/hr) flowrate, outside is 55°F, inside 47°F?
31. How many mmBTUs are generated by running a GC90+5 for 6 days?
28. How many mmBTUs are generated by burning 290 pounds of East.Hophornbeam?
32. Ammonia, 2380°F cycle, 907 (lb/hr) flowrate, outside is 47°F, inside 53°F?