

## Section I – Percentages

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1. 23 is what percent of 28.75?
2. What is 8% of 316?
3. 71 is 32% of what number?
4. 71 is 36% of what number?
5. What is 15% of 194?
6. 89 is what percent of 278.125?
7. 71 is 15% of what number?
8. 57 is what percent of 356.25?

## Section II – Blueprint Calculations

9. Shape A, Scale = 24, brick job.

13. Shape I, Scale = 36, tile job.

10. Shape B, Scale = 32, panel job.

14. Shape K, Scale = 30, wire job.

11. Shape E, Scale = 35, carpet job.

15. Shape M, Scale = 8, wire job.

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

16. Shape Q, Scale = 32, baseboard job.

## Section III – Carbon Footprint

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17. How many mmBTUs are generated by running a AB-155H for 8 months?
21. Propylene Glycol cycle, 617 (lb/hr) flowrate, outside is 44°F, inside 82°F?
18. Ethylene glycol cycle, 727 (lb/hr) flowrate, outside is 68°F, inside 78°F?
22. How many pounds of CO<sub>2</sub> are released by burning 228 pounds of Cottonwood?
19. Alcohol, ethyl 104oF (ethanol) cycle, 1351 (lb/hr) flowrate, outside is 45°F, inside 79°F?
23. How many pounds of CO<sub>2</sub> are released by burning diesel fuel for 4 hours in a EG-55?
20. How many mmBTUs are generated by burning 61 pounds of Norway Pine?
24. How many mmBTUs are generated by running a CGI-5 for 5 weeks?

## Section IV – Green Building

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25. How many pounds of CO<sub>2</sub> are released by burning heating oil (No. 2) for 7 months in a EVG 299?
29. Propylene Glycol cycle, 817 (lb/hr) flowrate, outside is 88°F, inside 44°F?
26. Dodecane cycle, 594 (lb/hr) flowrate, outside is 62°F, inside 63°F?
30. How many pounds of CO<sub>2</sub> are released by burning propane for 7 months in a EG-30?
27. Hexane cycle, 1467 (lb/hr) flowrate, outside is 67°F, inside 87°F?
31. How many pounds of CO<sub>2</sub> are released by burning 266 pounds of Yellow Birch?
28. How many pounds of CO<sub>2</sub> are released by burning 54 pounds of Jack Pine?
32. Room B's Ceiling, made of Ground or soil, dry area, if inside is 56°F and outside is 82°F?