Section I — Percentages

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1.   53 is what percent of 165.625?

5. 87 is what percent of 348?

2.   37 is 96% of what number?

6. What is 36% of 259.375?

3.   11 is 36% of what number?

7. 79 is 32% of what number?

4.   17 is what percent of 212.5?

8. 7 is 15% of what number?

Section II — Blueprint Calculations

9.   Shape A, Scale = 15, carpet job.   13. Shape G, Scale = 15, tile job.

10.   Shape A, Scale = 50, pipe job.   14. Shape M, Scale = 50, carpet job.

11.   Shape A, Scale = 24, tile job.   15. Shape K, Scale = 32, carpet job.

12.   Shape I, Scale = 48, tile job.   16. Shape Q, Scale = 50, brick job.

Section III — Carbon Footprint

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17. How many pounds of CO_2 are released by burning Anthracite coal for 5 months in a CGi-5?

21 Glycerine cycle, 1141 (lb/hr) flowrate, outside is 58°F, inside 58°F?

18. Room C's Wall #4, made of Cellulose, cotton, wood pulp, if inside is 67°F and outside is 21°F?

22 Room B's 4 Walls, made of Silicon oil, if inside is 79°F and outside is 105°F?

19. Room B's Wall #2, made of Brick, insulating, if inside is 56°F and outside is 16°F?

23 Ethylene glycol cycle, 552 (lb/hr) flowrate, outside is 51°F, inside 76°F?

20. Room B's 4 Walls, made of Glass, Pearls, dry, if inside is 58°F and outside is 5°F?

24 Room C's Wall #1, made of Gypsum board, if inside is 69°F and outside is 101°F?

Section IV — Green Building

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25. How many pounds of CO_2 are released by burning heating oil (No. 2) for 7 months in a GV90+4?

29. How many mmBTUs are generated by burning 121 pounds of Apple?

26. How many pounds of CO_2 are released by burning propane for 3 days in a ET 150-H?

30. Room A's Floor, made of Asbestos-cement, if inside is 73°F and outside is 69°F?

27. Room A's TSA, made of Concrete, lightweight, if inside is 84°F and outside is 65°F?

31. Ammonia, 32oF cycle, 641 (lb/hr) flowrate, outside is 40°F, inside 61°F?

28. Aniline cycle, 931 (lb/hr) flowrate, outside is 56°F, inside 60°F?

32. Room C's 4 Walls, made of Asbestos-cement, if inside is 56°F and outside is 56°F?