20. The weight of a battery of eight marine boilers and their equipments is as follows:

Boilers complete with mountings.......295 tons
Water in boilers .... 73 "
Funnels............................ 50 "
Stoke-hole plates, floors, etc.......... 23 "
Feed pumps........................   7 "
Fans and fan engines................   8 "
Feed regulators....................   2 "
Tools and fittings..................   2 "
Spare gear......................... 10 "
What is the weight of two such batteries ?

21. At 100 degrees Fahrenheit a cu. ft. of water weighs 62 pounds. At 205 degrees a cu. ft. weighs 60 pounds. What is the difference in weight between 173 cu. ft. of water at 100 degrees and 189 cu. ft. at 205 dgrees ?

22. A roof is composed of 11 frames. The weight of one frame in detail is as follows:

2 Rafters each weighing...............875 lbs.
5 Rods, each weighing.................176 "
16 Bolts, each weighing..............   5 "
8 Bridle-straps, each weighing........ 15 "
2 Piers supporting rafters at ridge, aver-
    age each........................ 11 "
6 Pieces at foot of struts, average each.. 11 "
4 Pieces uniting rafters at junction in
    strut, with bolts and nuts, each..... 44 "
2 Rafter shoes, each.................144 "
2 Cast-iron struts, each..............154 "
What is the total weight of the roof ?

23. A double mine ventilating fan runs at the rate of 84 revolutes per minute. It gives 2818 cu. ft. of air