SELF-INSTRUCTOR

11. What difference is there between a floor 28 feet long \times 20 feet broad, and two others, each of half the dimensions; and what do the three floors come to @ \$9.00 per 100 square feet? Ans. \$75.60.

12. An elm plank is 14 feet 3 inches long, and it is desired that just a square yard may be slit off from it; at what distance from the edge must the line be struck?

Ans. 7_{177}^{99} inches.

13. A joist is 7 inches wide and $2\frac{1}{2}$ inches thick, but a scantling just as big again, that shall be 3 inches thick, is wanted; what will the other dimension be?

Ans. $11\frac{2}{3}$ inches.

14. The perambulator is so contrived as to turn just twice in $16\frac{1}{2}$ feet; required the diameter? Ans. 2.626 feet.

15. In turning a chaise within a ring of a certain diameter, it was observed that the outer wheel made two revolutions while the inner made but one; the wheels were both 4 feet high, and supposing them fixed at the distance of 5 feet asunder on the axletree, what was the circumference of the track described by the outside wheel? Ans. 63 feet nearly.

16. Having a rectangular board 58 inches by 27 inches, I would have a square foot cut off parallel to the shorter edge; I would then have the same quantity cut from the remainder, parallel to the longer, and this alternately repeated, till there shall not be the quantity of a foot left; what will be the dimensions of the remaining piece?

Ans. 20.7 inches by 6.086.

17. What is the length of a chord which cuts off $\frac{1}{3}$ of the area of a circle, whose diameter is 289?

Ans. 278.6716.

18. What will the diameter of a globe be, when the solidity an? superficial contents are expressed by the same number? Ans. 6.

19. A gentleman has a garden 100 feet long and 80 feet broad, and a gravel walk is to be made of an equal width half round it; what must be the breadth of the walk to take up just half the ground? Ans 25.968 feet.

70