To find when the two hands will come together between 6 and 7.

Say 11 : 12 :: 6 : 6. 32. 43 3-11, the true time is 32. 43 3-11. Answer.

PROBLEMS FOR THE ALMANACK.

Divide the number 10 into two such parts, that if the greater be divided by the lesser, the quotient will be 10.

If a log be 3 feet in circumference at each end, and 60 feet long. How many feet of square edged two-inch plank may it be sawed into, allowing ¼ inch for the saw calf?

PROBLEMS FOR YOUNG MECHANICS.

I. A beam twenty feet long, supported at both ends, carries a weight of 8 tons 4 feet from one end, and another of 3 tons 1 foot from the other end, what proportion of weight does each of the supporters bear?

II. A weight of 100 tons is to be raised 380 feet in 15 minutes, by a power, the velocity of which is 220 feet per minute. What is the power required?

III. A power of 90 lbs. at the rate of 200 feet per minute, is applied to pull a weight up an inclined plane at the rate of sixty feet per minute, when the plane is 40 feet long and 20 feet high. How much will be the weight drawn?

IV. The gate of a sluice is 16 feet deep, and 24 feet broad; what is the pressure of water against it?

The number of feet in the perimeter of a right angled triangle, is equal to the number of square feet in the area, and the base is to the perpendicular as 8 to 6. Required the length of each of the sides?

QUESTIONS.

By Joseph Owens, Royal Sappers and Miners.

I. A person being asked what o'clock it was, replied, "The time past noon is 4-5ths of the time from this till midnight." Required the time by Vulgar Fractions?

II. A ship having struck against a rock, it was found on examination that there was a breach in her bow 12 inches square. The carpenter had at the time only one board measuring 9 by 16 inches, which was considered by a majority as useless on the occasion; the carpenter, however, being a mathematician, insisted that "the board would exactly answer his purpose;" which he proved to be the case by cutting it into two sections. How was it possible for those sections to be cut, in order that when joined again in another position, that they would EXACTLY fit the breach—omitting the waste of sawing, &c.?

III. There is a street 810 yards long, in which there is a certain number of cylindrical lamps in a right line, which are placed at equal distances. Each lamp is 2 feet in diameter. At the northern end of this street, there is a road leading in a N. N. W. direction, at the distance of 47 yards. On this road there is also a lamp. Now if a person who is placed at Lamp No. 1, (at the south end of the street) move forward in a S. S. E. direction, 120 yards, a direct ray in passing—to his eye—from the lamp on the N. N. W. road, will be respectively tangent to the 18th and 19th lamps in the street. Required the number of lamps in the street by calculation?

IV. On the 9th June, in latitude 54 degrees, 36 minutes north, I observed the Sun to be at its greatest altitude at 52 minutes past 11 o'clock, with my watch. On the 17th July, in the same parallel of latitude, at 12 o'clock, I made a second observation, and found his altitude to be 22 degrees less than on the former occasion. Supposing my watch to have performed regularly, I desire to know by calculation the distance between the places of observation expressed in English miles.

[We have to acknowledge communications from A.—from S. E. M., and from J. F. N. The Answers by G. T. K. are more satisfactory than those