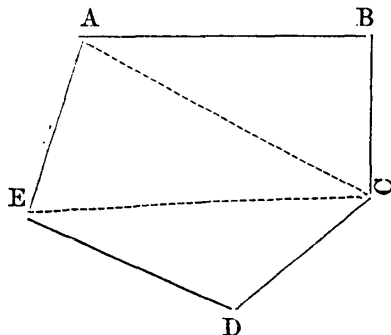5. What is the area of a circular vessel having a diameter of 130 in.

6. What is the area of an elliptic floor, the axes of which are 33 ft. 5 in. and 20 ft. 3 in., respectively.

7. In this figure, the following measurements being given, find the area, to three places of decimals:

A B = 6 ft.
B C " 3 "
C D " 4 "
D E " 5 "
A E " 4 "
A C " 7 "
E C " 8 "

8. Or given in a similar figure:—

    E C = 10 ft.

    A C = 9 ft. and perpendiculars to A C from B, A to E C and E C to D 2½ ft.
        3¼ ft. and 3 feet respectively, what would be the area?

9. If the diameter of a circle be 10 in., what is its circumference, what its area in inches, and what its capacity in imperial gallons to each 10 in. in depth?

No. 5.

Use of Slide Rule.

Time—1 Hour.

(Maximum number of marks attainable, 75.)

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1. Upon what principle is the slide rule constructed?

2. What do you understand by the terms "arithmetical" and "geometrical" progression respectively?

3. Is there any distinguishing difference between the lines A, B, and C, and wherein do the lines D and M D differ from the line A?

4. What are the significations of the letters M D, S S, and S L, and which line is more particularly suitable for use in the survey of malt houses?

5. Explain how you would proceed in order to solve the following questions by the slide rule, and state what figures on B would be opposite, 1 on A, and what figure on A would be opposite the required answer on B?