1. Explain and illustrate a method of finding the greatest common divisor.

2. When it is Monday 7 a.m. at San Francisco, longitude 122° 24' 15" W., what day and time of day is it at Berlin, longitude 13° 23' 55" E.?

3. Prove that the product of the greatest common divisor and the least common multiple of any two numbers is equal to the product of the numbers.

4. Name the principal unit of the metric system. How was this unit determined? How are the units of capacity and of weight related to that of length?

5. Derive a rule for finding the sum of an arithmetic progression when the first term, common difference and number of terms are known.

6. Find the cube root of 1897 to two places of decimals.

7. Find the face of a note that will yield $861.44 proceeds when discounted for 90 days at 6%.

8. The longer sides of an oblong rectangle are 15 feet and the diagonal is 20 feet; find its area.

9. Jan. 1, 1893, A invests $2000 and B $3000 in a partnership. April 15, 1893, C joins the firm and invests $1800. Jan. 1, 1894, the present worth of the concern is $12000. Each partner is allowed $100 a month for services. What is each partner's share of the profits?

10. Find the surface and the volume of a sphere whose diameter is 4 feet.