17. ABC is a right-angled triangle (C = 90°), and CD is drawn perpendicular to AB.

(1) Prove that triangles CAD and BAC are equiangular; also CBD and ABC equiangular.

(2) Hence show that

$$\frac{AC^2 + BC^2}{AB^2} = 1.$$

18. The cheese exports of Canada being, in 1871, 8271000 lbs.; in 1881, 49255000 lbs.; in 1891, 106202000 lbs.; in 1901, 195926000 lbs.; construct equilateral triangles whose areas shall approximately represent these exports, the side of the first triangle being 29 millimetres.

19. What will be the sides of the triangles if their perimeters are to represent the exports, the side of the first being again 29 millimetres?

20. Construct two triangles, the sides of one being twice the sides of the other, and ascertain the following:

(1) The ratio of perpendiculars from corresponding angles on opposite sides.

(2) The ratio of corresponding segments (of sides) made by feet of perpendiculars.

(3) The ratio of lines from corresponding angles to bisections of opposite sides.