it is required to find in AB a point P, such that a perpendicular being drawn from it to AC, the straight line AP may exceed this perpendicular by a proposed length.

470. Shew that the opposite sides of any equiangular hexagon are parallel, and that any two sides which are adjacent are together equal to the two to which they are parallel.

471. From D and E, the corners of the square $BDEC$ described on the hypotenuse BC of a right-angled triangle ABC, perpendiculars DM, EN are let fall on AC, AB respectively: shew that AM is equal to AB, and AN equal to AC.

472. AB and AC are two given straight lines, and P is a given point: it is required to draw through P a straight line which shall form with AB and AC the least possible triangle.

473. ABC is a triangle in which C is a right angle: shew how to draw a straight line parallel to a given straight line, so as to be terminated by CA and CB, and bisected by AB.

474. ABC is an isosceles triangle having the angle at B four times either of the other angles; AB is produced to D so that BD is equal to twice AB, and CD is joined: shew that the triangles ACD and ABC are equiangular to one another.

475. Through a point K within a parallelogram $ABCD$ straight lines are drawn parallel to the sides: shew that the difference of the parallelograms of which KA and KC are diagonals is equal to twice the triangle BKD.

476. Construct a right-angled triangle, having given one side and the difference between the other side and the hypotenuse.

477. The straight lines AD, BE bisecting the sides BC, AC of a triangle intersect at G: shew that AG is double of GD.

478. BAC is a right-angled triangle; one straight line is drawn bisecting the right angle A, and another bisecting the base BC at right angles; these straight lines intersect at E: if D be the middle point of BC, shew that DE is equal to DA.

479. On AC the diagonal of a square $ABCD$, a rhombus $AEFC$ is described of the same area as the square,