

460. On a given straight line as base, construct a triangle, having given the difference of the sides and a point through which one of the sides is to pass.

461. ABC is a triangle in which BA is greater than CA ; the angle A is bisected by a straight line which meets BC at D ; shew that BD is greater than CD .

462. If one angle of a triangle be triple another the triangle may be divided into two isosceles triangles.

463. If one angle of a triangle be double another, an isosceles triangle may be added to it so as to form together with it a single isosceles triangle.

464. Let one of the equal sides of an isosceles triangle be bisected at D , and let it also be doubled by being produced through the extremity of the base to E , then the distance of the other extremity of the base from E is double its distance from D .

465. Determine the locus of a point whose distance from one given point is double its distance from another given point.

466. A straight line AB is bisected at C , and on AC and CB as diagonals any two parallelograms $ADCE$ and $CFBG$ are described; let the parallelogram whose adjacent sides are CD and CF be completed, and also that whose adjacent sides are CE and CG : shew that the diagonals of these latter parallelograms are in the same straight line.

467. $ABCD$ is a rectangle of which A, C are opposite angles; E is any point in BC and F is any point in CD : shew that twice the area of the triangle AEF , together with the rectangle BE, DF is equal to the rectangle $ABCD$.

468. ABC, DBC are two triangles on the same base, and ABC has the side AB equal to the side AC ; a circle passing through C and D has its centre E on CA , produced if necessary; a circle passing through B and D has its centre F on BA , produced if necessary: shew that the quadrilateral $AEDF$ has the sum of two of its sides equal to the sum of the other two.

469. Two straight lines AB, AC are given in position: