

8. On BC describe an equilateral triangle ABC, and on the other side of BC describe a scalene triangle DBC. Join AD. Take a number of points E, F, G, . . . in AD. What do you note as to the lengths of EB and EC; of FB and FC; of GB and GC,?
9. Repeating the figure of 8, take in BC, and on the same side of AD, a number of points K, L, M, N, . . . What do you note as to the lengths of AK, AL, AM, AN, . . .? Do they seem to follow any law as to magnitude?
10. Describe an equilateral triangle ABC. On BC describe an equilateral triangle DBC; on CA an equilateral triangle ECA; and on AB an equilateral triangle FAB. Join AD, BE, CF. What do you observe as to the positions of the lines DC, CE with respect to one another; of EA, AF; and of FB, BD?
11. In the preceding question mark all the angles that are equal to one another; also all the lines that are equal to one another.
- What triangles are isosceles?
- Do you observe any equilateral four-sided figures?
- How many equilateral triangles are there?
12. With centre A, outside a straight line, describe a circle of such radius as to cut the line in two points, B and C. What sort of triangle is ABC?
13. In the figure of the preceding question find on the side of BC remote from A, a point D, such that a circle with D as centre can be described to pass through both B and C.
14. B and C being two points in a line, find on either side of the line points K, L, M, N, . . . such that a circle may be described, with any one of them as centre, to pass through B and C. What do you observe as to the positions of K, L, M, N, . . . with respect to one another?
15. Construct a scalene triangle ABC, and on the side of BC away from A, describe a triangle DBC, with $DB=AB$, and $DC=AC$. Join AD. What triangles in the figure are isosceles? What inference can you draw as to the angles BAC, BDC? Is any line in the figure bisected? What are the angles at the intersection of BC and AD? (Apply set-square.)