1. ABCD is a quadrilateral in which the bisectors if ∠A and ∠C meet DC produced at Y and BA produced at X respectively. Prove that: ∠x + ∠y = ½ (∠A + ∠C).
* <http://bit.ly/1Yjx5nK>
1. ABC is an isosceles triangle with AB=AC. If D,E,F are the midpoints of sides BC,CA,AB. Show that AD bisects EF at 90°.
* <http://bit.ly/1QTf6Cu>
1. A 4cm cube is cut into 1cm cubes. Calculate the total surface area of all the small cubes.
2. Draw the line of equation $y=\left|x\right|+2$
3. A closed iron tank 12 m long, 9 m wide and 4 m deep is to be made. Determine the cost of iron sheet used at the rate of Rs. 5 per metre sheet, sheet being 2 m wide.
* <http://bit.ly/1StUkrG>
1. An open box is made of wood 3 cm thick. Its external length, breadth and height are 1.48 m, 1.16 m and 8.3 dm. Find the cost of painting the inner surface at Rs. 50 per sq. meter.
2. Prove: $\frac{1}{V}=\frac{2}{S}(\frac{1}{a}+\frac{1}{b}+\frac{1}{c})$ where V is volume of cuboid, S is surface area and a,b,c are edges.
3. A rectangular tank is 80 m long and 25 m wide. Water flows into it through a pipe whose cross section is 25 cm sq. at rate of 16 km/hr. How much the level of water rises in 45 min?
4. A rectangular container, whose base is a square of side 5 cm. stands on a horizontal table, and holds water up to 1 cm. from the top. When a cube is placed in the water it is completely submerged, the water rises to the top and 2 cm3 of water overflows. Calculate the volume of the cube and also the length of its edge.
* Let height be h. Volume of rectangular container is **25h** cm3. Given that 1 cm height is not filled. So volume not filled = **25** cm2. Volume of water in container = **25h – 25 = 25(h-1)** cm3. Volume of water overflown = **2** cm3. Therefore new volume = **25h+2** cm3.
	+ Volume of cube inserted = **25h +2 – 25(h-1)** = **27** cm3. s = 3 cm.
1. Prove that the straight line joining the mid-points of the diagonals of a trapezium is parallel to the parallel sides and is equal to half of their difference
* <http://bit.ly/1YGXex1>
1. 3 parallel lines l, m & n are cut by 2 transversals p & q at A, B, C and D, E, F respectively. Prove that $\frac{AB}{BC}=\frac{DE}{EF}$
* <http://bit.ly/1NGWXbz>
1. The vertices of quadrilateral ABCD are on the semi-circle such that AB=BC=CD=10 cm and AD is the diameter with center O. Find the perimeter of ABCD.
* <http://bit.ly/1HGEf1j>
1. Prove that the line segment joining the midpoints of two equal chords of a circle subtends equal angles with the chords.
* <http://bit.ly/1lxp9AV>
1. ABCD is a ||gm. AD is produced to E so that DE=DC and EC produced meets AB produced in F. Prove that BF=BC.
* <http://bit.ly/21xtfKe>
1. AB is the diameter of a circle. CD is a chord equal to the radius of the circle. AC and BD when extended intersect at point E. Prove that <AEB= 60°
* <http://bit.ly/21xPUGv>

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1. Prove that x+y = z
2. Two circles intersect at two points A and B. AD and A C are diameters to the two circles. Prove that B lies on the line segment DC
* <http://bit.ly/1J6U3LK>