

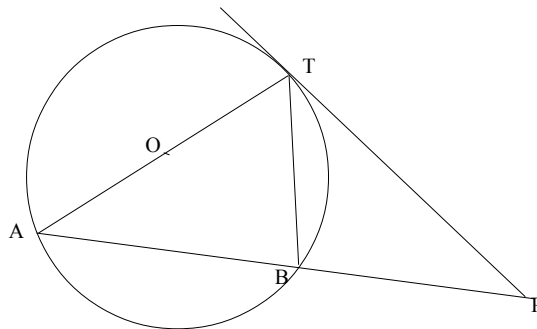
Year 11 – Questions on “new” topics

- 1) Solve the simultaneous equations $x^2 + y^2 = 25$
 $y = 3x + 13$
- 2) Sketch the graphs of the two equations in question 1. On your sketch, mark the points corresponding to the solutions of the simultaneous equations.
- 3) Prove that the line $y - x = 4$ is a tangent to the circle $x^2 + y^2 = 8$
- 4) Solve the inequality $5 < 8 - 2x \leq 13$ and illustrate the solution on a number line.
- 5) Find the equation of the straight line which is perpendicular to the line $y = 4x + 6$, and passes through the point (4,3).

- 6) (a) Simplify $\frac{32}{\sqrt{8}}$ (b) Express $1.\dot{0}3\dot{9}$ as a fraction

- 7) The masses (in kg) of 23 students are shown below:
54 41 44 52 60 59 47 45 51 54 53 58 51 40 44 47 48 56 54 45 43 51 49

- (a) Draw a stem and leaf diagrams of this data, using classes 40-44, 45-49 etc
(b) Find the median and quartiles of the data, and hence draw a box and whisker plot.



- 8) In the diagram above the tangent from the point P to the circle centre O touches the circle at T. AP cuts the circumference at the point B. If B bisects AP prove that the angle BTP is 45° .