

PENGAYAAN MATEMATIKA

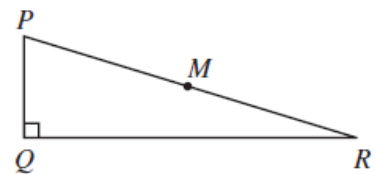
SOAL-SOAL GEOMETRI 6

1. COMC, 2001

A regular hexagon is a six-sided figure which has all of its angles equal and all of its side lengths equal. If P and Q are points on a regular hexagon which has a side length of 1, what is the maximum possible length of the line segment PQ ?

2. COMC, 2001

Triangle PQR is right-angled at Q and has side lengths $PQ = 14$ and $QR = 48$. If M is the midpoint of PR , determine the cosine of $\angle MQP$.



3. COMC, 2001

The triangular region T has its vertices determined by the intersections of the three lines $x + 2y = 12$, $x = 2$ and $y = 1$.

(a) Determine the coordinates of the vertices of T , and show this region on the grid provided.

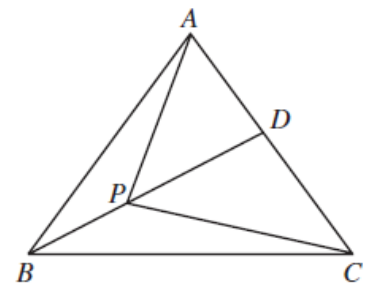
(b) The line $x + y = 8$ divides the triangular region T into a quadrilateral Q and a triangle R .

Determine the coordinates of the vertices of the quadrilateral Q .

(c) Determine the area of the quadrilateral Q .

4. COMC, 2001

Triangle ABC is isosceles with $AB = AC = 5$ and $BC = 6$. Point D lies on AC and P is the point on BD so that $\angle APC = 90^\circ$. If $\angle ABP = \angle BCP$, determine the ratio $AD:DC$.



5. COMC, 2002

In triangle PQR , F is the point on QR so that PF is perpendicular to QR . If $PR = 13$, $RF = 5$, and $FQ = 9$, what is the perimeter of $\triangle PQR$?

