

PENGAYAAN MATEMATIKA

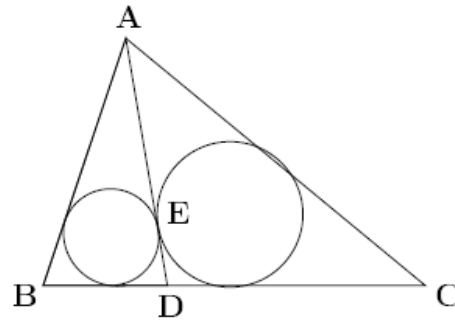
SOAL-SOAL GEOMETRI 2

1. COMC, 1997

Determine all points on the straight line which joins $(-4, 11)$ to $(16, -1)$ and whose coordinates are positive integers.

2. COMC, 1997

The triangle ABC has sides $AB = 137$, $AC = 241$, and $BC = 200$. There is a point D , on BC , such that both incircles of triangles ABD and ACD touch AD at the same point E . Determine the length of CD .



3. COMC, 1997

Determine the minimum value of $f(x)$ where

$$f(x) = (3 \sin x - 4 \cos x - 10)(3 \sin x + 4 \cos x - 10).$$

4. COMC, 1997

The straight line l_1 with equation $x - 2y + 10 = 0$ meets the circle with equation $x^2 + y^2 = 100$ at B in the first quadrant. A line through B , perpendicular to l_1 cuts the y -axis at $P(0, t)$. Determine the value of t .

5. COMC, 1997

In an isosceles right-angled triangle AOB , points P, Q and S are chosen on sides OB, OA and AB respectively such that a square $PQRS$ is formed as shown. If the lengths of OP and OQ are a and b respectively, and the area of $PQRS$ is $\frac{2}{5}$ that of triangle AOB , determine $a : b$.

