MASSACHUSETTS MATHEMATICS LEAGUE
CONTEST 2 - NOVEMBER 2006
ROUND 6 PLANE GEOMETRY: ANGLES, TRIANGLES AND PARALLELS

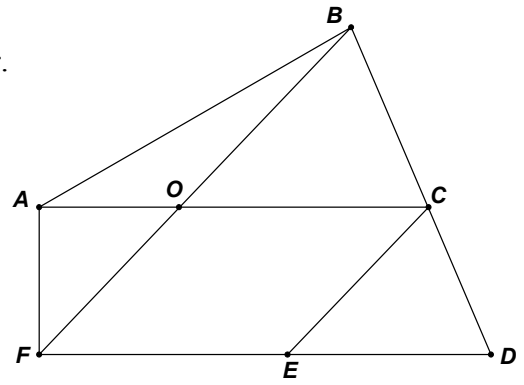
ANSWERS

A) _____ °

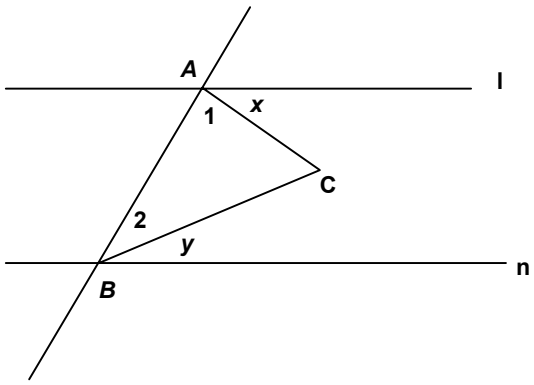
B) $y =$ _____

C) _____

A) Let $x = m\angle FAB$.
If $OC = FE$, $EC = ED$, $m\angle OCE = 42°$, $m\angle D = 69°$, $m\angle AFE = 93°$ and $m\angle ABO = 20°$, determine the value of x.
The diagram is not necessarily drawn to scale.



B) If $l \parallel n$ and the measure of angle C is three times the sum of the measures of angles 1 and 2, find y in terms of x.



C) In ΔACF, $AB = AE$, $AE = EF/3$, $m\angle ACE = m\angle AFB$, $BC = 6$ and $AC = CF/2 + 6$. Find CF.
The diagram is not necessarily drawn to scale.
Your answer must be exact and expressed in simplified form.