

MASSACHUSETTS MATHEMATICS LEAGUE
CONTEST 4 – JANUARY 2014
ROUND 1 ANALYTIC GEOMETRY: ANYTHING

ANSWERS

A) _____

B) _____

C) (_____ , _____) (_____ , _____)

- A) The points $A(3, b)$ and $B(a, 4)$ lie on the parabola $y = x^2$.
Compute the largest possible value for the distance AB .
- B) An ellipse is centered at the focus of the parabola $y = x^2$ and passes through the vertex and the endpoints of the focal chord of the parabola. Compute $\frac{c}{a}$, the eccentricity of this ellipse.
- C) Find the coordinates of the foci for the conic defined by $3y^2 - x^2 + 24y + 14x = 49$.