MASSACHUSETTS MATHEMATICS LEAGUE
CONTEST 2 – NOVEMBER 2007
ROUND 1 ALG 2: COMPLEX NUMBERS (No Trig)

ANSWERS

A) (_____) + (_____)i

B) _____

C) _____

A) Solve over the complex numbers, expressing your answer in simplified $a + bi$ form.
(Note: $\bar{z} = a - bi$ and denotes the conjugate of z.)

$$z + 6\bar{z} = 7 + 3i$$

B) Find all possible solutions of $z^2 = 75 + 100i$.
Leave your answer(s) in $a + bi$ form.

C) Solve for x.

$$|-3+4i|\,x^2 - |12+16i|\,x = |7-24i|$$