Name _____ Date _____

The Fundamental Theorem of Algebra - Matching Worksheet

Write the letter of the answer that matches the problem.

_____ 1. What are the roots of $y^2 + 75$?

_____ 2. What are the roots of $x^2 - 48$?

_____ 3. What are the roots of $x^2 + 52$?

_____ 4. Solve the equation and write any complex solutions in the form a + bi, where a and b are real numbers.
$6x^2 + 114 = 0$

_____ 5. Solve the equation and write any complex solutions in the form a + bi, where a and b are real numbers.
$8x^2 + 19 = 0$

_____ 6. Solve the equation and write any complex solutions in the form a + bi, where a and b are real numbers.
$13x^2 + 121 = 0$

_____ 7. Find a polynomial with integer coefficients satisfying the following conditions:
Degree 3 with zeros 5, -10, and 8.

_____ 8. Find a polynomial with integer coefficients satisfying the following conditions:
Degree 3 with zeros 0, 7, and 3.

a. $-i\sqrt{19}, i\sqrt{19}$

b. $\pm i\frac{11}{\sqrt{13}}$

c. $x^3 + 3x^2 - 90x - 400$

d. $\pm\sqrt{75}$

e. $\pm\sqrt{48}$

f. $x^3 + 10x^2 + 21x$

g. $\pm\sqrt{52}$

h. $\pm i\sqrt{\frac{19}{8}}$