

Name: \_\_\_\_\_  
PCH: More polynomial practice

Date: \_\_\_\_\_  
Ms. Loughran

1. Show that  $(x+2)$  is not a factor of  $x^3 - 3x^2 + 1$ .
2. A rectangular room has a volume of  $3x^3 - 2x^2 - 11x + 10$  cubic feet. The height of the room is  $x - 1$ . Find the algebraic expression for the number of square feet of floor space in the room.
3. Solve the equation  $x^3 - 7x^2 + 25x - 39 = 0$ , given that  $2 - 3i$  is one root.
4. Find  $c$  and  $d$  such that 1 and 2 are roots of the equation  $x^3 - 4x^2 + cx + d = 0$ .
5. Determine the value(s) of  $a$  such that one root of the equation  $x^2 + ax + 12 = 0$  is three times the other.
6. When  $x^2 + 5x - 2$  is divided by  $x + n$ , the remainder is -8. Find  $n$ .
7. Find a polynomial of degree 4 having integer coefficients and zeros  $2i$  and 3 with 3 a double zero.