

- (e) If  $kx^2 + bx + 2$  and  $kx^2 + dx + 1$  have a common factor of  $(x - p)$  prove that  $p = \frac{1}{d-b}$ , where  $k, b$  and  $d$  are all real.

Assessor's  
use only

## QUESTION TWO

- (a) What is the remainder when  $x^3 - 6x + 14$  is divided by  $x + 2$ ?

- (b) The complex number  $\frac{7+4i}{2-i}$  can be expressed in the form  $k(1 + 1.5i)$ , where  $k$  is a real number. Find the value of  $k$ .

- (c) Find the real numbers  $A, B$  and  $C$  such that  $\frac{1}{(x-1)^2(x+1)} = \frac{A}{x-1} + \frac{B}{(x-1)^2} + \frac{C}{x+1}$ .