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// CS5900 Summer 2015
// Basic math operations with complex numbers


#include <stdio.h>      /* Standard Library of Input and Output */
#include <complex.h>    /* Standard Library of Complex Numbers */

int main() {

    double complex z1 = 1.0 + 7.0 * I;
    double complex z2 = 2.0 - 4.0 * I;

    printf(" **** Working with complex numbers ****\n");

    printf("\nStarting values: Z1 = %.2f + %.2fi\tZ2 = %.2f %+.2fi\n",
creal(z1), cimag(z1), creal(z2), cimag(z2));

    double complex sum = z1 + z2;
    printf("\nThe sum: Z1 + Z2 = %.2f %+.2fi\n", creal(sum), cimag(sum));

    double complex difference = z1 - z2;
    printf("The difference: Z1 - Z2 = %.2f %+.2fi\n", creal(difference),
cimag(difference));

    double complex product = z1 * z2;
    printf("The product: Z1 x Z2 = %.2f %+.2fi\n", creal(product),
cimag(product));

    double complex quotient = z1 / z2;
    printf("The quotient: Z1 / Z2 = %.2f %+.2fi\n", creal(quotient),
cimag(quotient));

    double complex conjugate = conj(z1);
    printf("The conjugate of Z1 = %.2f %+.2fi\n", creal(conjugate),
cimag(conjugate));

    getch();
    return 0;
}
```