36. The goal of this lab exercise is to implement an error-detection mechanism using the standard CRC algorithm described in the text. Write two programs, *generator* and *verifier*. The *generator* program reads from standard input a line of ASCII text containing an n-bit message consisting of a string of 0s and 1s. The second line is the k-bit polynomial, also in ASCII. It outputs to standard output a line of ASCII text with $n + k$ 0s and 1s representing the message to be transmitted. Then it outputs the polynomial, just as it read it in. The verifier program reads in the output of the generator program and outputs a message indicating whether it is correct or not. Finally, write a program, *alter*, that inverts 1 bit on the first line depending on its argument (the bit number counting the leftmost bit as 1) but copies the rest of the two lines correctly. By typing

```
generator <file | verifier
```

you should see that the message is correct, but by typing

```
generator <file | alter arg | verifier
```

you should get the error message.