

Chapter 11 / **Example 14**

Calculating binomial probabilities

A courier delivers packages each day of the week.

The probability that the courier delivers the packages by 9.00 am is 0.7.

Construct a probability distribution table for the week and write an expression for the probability that on seven days they deliver the packages before 9.00 am on five occasions.

Assuming $X \sim B(7, 0.7)$

To find $P(X = 5)$

Press **MENU** 2 **STAT** to display the List Editor screen.

Press **F5** DIST **F5** BINOMIAL **F1** Bpd.

Choose **F2** Var.

Enter 5 as the value of x, 7 as Numtrial and 0.7 as p.

Choose **F1** None to save the result.

```
Binomial P.D
Data      :Variable
x         :5
Numtrial  :7
p         :0.7
Save Res:None
Execute
[CALC]
```

Navigate down to Execute and press **EXE**.

The GDC displays the solution $P(X = 5) = 0.318$.

```
Binomial P.D
p=0.3176523
```