

Chapter 14 / **Example 4**

Calculating binomial probabilities

X is a binomially distributed discrete random variable which represents the number of successes in six trials. The probability of success in each trial is $\frac{1}{5}$.

What is the probability of

a exactly four successes

b at least one success?

Press **2nd** **vars** (**[distr]**)A:binompdf...

Enter 6 as the number of trials, $\frac{1}{5}$ as the probability of success (type $1 \div 5$) and 4 as the X value.

Navigate down to Paste and press **enter**.

```
binompdf
trials:6
p:1/5
x value:4
Paste
```

Press **enter**.

The GDC displays the solution $P(X = 4) = 0.01536$.

```
binompdf(6,1/5,4)
.....01536
```

Type 1 **▢**

Press **2nd** **vars** (**[distr]**)A:binompdf...

Enter 6 as the number of trials, $\frac{1}{5}$ as the probability of success (type $1 \div 5$) and 4 as the X value.

Navigate down to Paste and press **enter**.

```
binompdf
trials:6
p:1/5
x value:0
Paste
```

Press **enter**.

The GDC displays the solution $P(X \geq 1) = 1 - P(X = 0) = 0.738$.

```
binompdf(6,1/5,4)
.....01536
1-binompdf(6,1/5,0)
.....737856
```