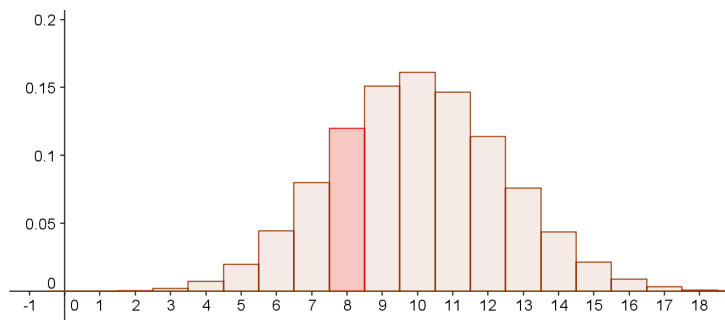


Praxis der BV - Verwendung des GTR

Die Zufallsvariable X ist $B_{25;0,4}$ - verteilt, d.h. $n = 25$ und $p = 0,4$.
Wie groß ist die Wahrscheinlichkeit für

- genau 8 Treffer,
- höchstens 10 Treffer,
- mindestens 11 Treffer
- mindestens 7 und höchstens 10 Treffer?

a) genau 8 Treffer

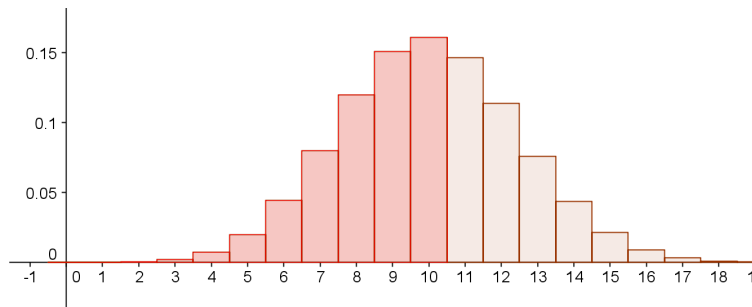


```
25 nCr 8
1081575
Ans*.4^8*.6^17
.1199797154
binomPdf(25,0.4,
8)
.1199797154
```

$$P(X = 8) = \binom{25}{8} \cdot 0,4^8 \cdot 0,6^{17} \approx 0,120 = 12,0\% \quad (\text{TI 84: Math} \rightarrow \text{PRB} \rightarrow 3)$$

GTR: binompdf(n,p,k) (TI 84: **DISTR** \rightarrow **DISTR** \rightarrow **A**)

b) höchstens 10 Treffer

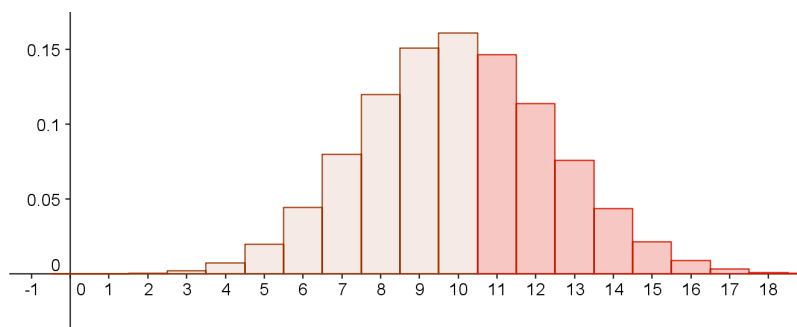


```
binomcdf(25,0.4,  
10)  
.5857749568
```

$$P(X \leq 10) = P(X = 0) + P(X = 1) + \dots + P(X = 10) \approx 0,586 = 58,6\%$$

☺ lieber gleich → GTR: **binomcdf(n,p,k)** (TI 84: DISTR → DISTR → B)

c) mindestens 11 Treffer

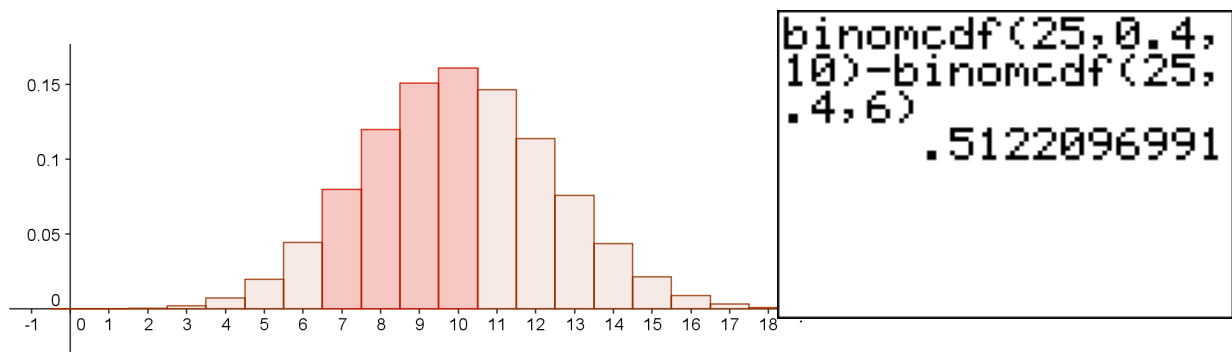


```
1-binomcdf(25,0.  
4,10)  
.4142250432
```

$$\begin{aligned} P(X \geq 11) &= P(X = 11) + P(X = 12) + \dots + P(X = 25) \\ &= 1 - P(X \leq 10) \end{aligned}$$

GTR: **binomcdf(n,p,k)** (TI 84: DISTR → DISTR → B)

d) mindestens 7 und höchstens 10 Treffer



$$\begin{aligned} P(7 \leq X \leq 10) &= P(X = 7) + P(X = 8) + P(X = 9) + P(X = 10) \\ &= P(X \leq 10) - P(X \leq 6) \end{aligned}$$

GTR: binomcdf(n,p,k) (TI 84: DISTR → DISTR → B)

