Grafing av sannsynlighetsfordelinger på Casio grafiske lommeregnere

Normalfordeling (pdf): $X \sim \phi_{(\mu,\sigma)}$

Menu, 5: Graph, OPTN, F6: ▷, F3: STAT, F1: DIST,
F1: NORM, F1: Npd

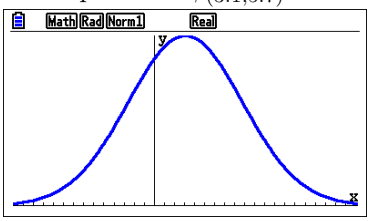
Allment: $Y1 = NormPD(x, \sigma, \mu)$ (Variabel x fra X, θ, T-knappen).

F6: Draw for å tegne fordelingen.
F3: V-Window for å stille vinduet:

$x \in [\mu - 3\sigma, \mu + 3\sigma]$, $y \in [0, \phi_{(\mu,\sigma)}(\mu)]$

Tips: Etter at Xmin og Xmax er satt, tegn grafen på ny og bruk
F2: Zoom fulgt av F5: Auto for å stille høyden automatisk.

Eksempel: $X \sim \phi_{(3.1,5.7)}$



$Y1 = NormPD(x, 5.7, 3.1)$
$x \in [-14, 20.2]$, $y \in [0, 0.07]$

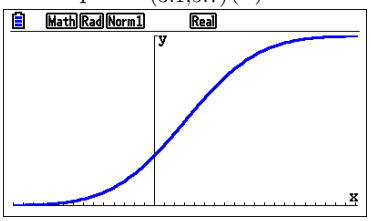
Normalfordeling (CDF): $\Phi_{(\mu,\sigma)}(x)$

Menu, 5: Graph, OPTN, F6: ▷, F3: STAT, F1: DIST,
F1: NORM, F2: Ncd

Allment: $Y1 = NormCD(-10^{99}, x, \sigma, \mu)$
$x \in [\mu - 3\sigma, \mu + 3\sigma]$, $y \in [0, 1]$

Eksempel: $Y1 = NormCD(-10^{99}, x, 5.7, 3.1)$, $x \in [-14, 20.2]$, $y \in [0, 1]$

Eksempel: $\Phi_{(3.1,5.7)}(x)$



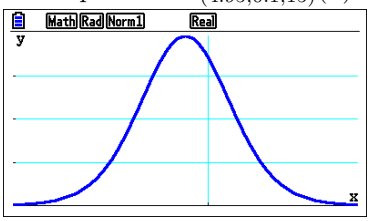
Students t-fordeling (pdf): $X \sim t_{(\mu,\sigma,\nu)}(x)$

Menu, 5: Graph, OPTN, F6: ▷, F3: STAT, F1: DIST,
F2: t, F1: tpd

Allment: $Y1 = \frac{1}{\sigma} \times tPD(\frac{x-\mu}{\sigma}, \nu)$
$x \in [T^{-1}_{(\mu,\sigma,\nu)}(0.001), T^{-1}_{(\mu,\sigma,\nu)}(0.999)]$, $y \in [0, t_{(\mu,\sigma,\nu)}(\mu)]$

Eksempel: $Y1 = 10 \times tPD(\frac{x-4.95}{0.1}, 15)$, $x \in [4.57, 5.33]$, $y \in [0, 3.93]$

Eksempel: $X \sim t_{(4.95,0.1,15)}(x)$



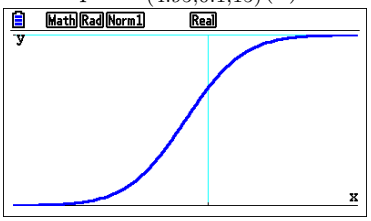
Students t-fordeling (CDF): $T_{(\mu,\sigma,\nu)}(x)$

Menu, 5: Graph, OPTN, F6: ▷, F3: STAT, F1: DIST,
F2: t, F2: tcd

Allment: $Y1 = tCD(-10^{99}, \frac{x-\mu}{\sigma}, \nu)$
$x \in [T^{-1}_{(\mu,\sigma,\nu)}(0.001), T^{-1}_{(\mu,\sigma,\nu)}(0.999)]$, $y \in [0, 1]$

Eksempel: $Y1 = tCD(-10^{99}, \frac{x-4,95}{0.1}, 15)$, $x \in [4.57, 5.33]$, $y \in [0, 1]$

Eksempel: $T_{(4.95,0.1,15)}(x)$



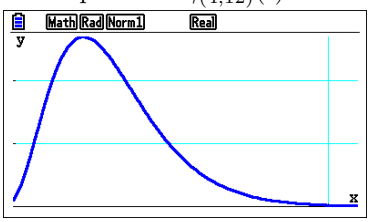
Gamma-fordeling (pdf): $T \sim \gamma_{(k,\lambda)}(t)$

Menu, 5: Graph, OPTN, F6: ▷, F3: STAT, F1: DIST,
F3: CHI, F1: Cpd

Allment: $Y1 = 2\lambda \times ChiPD(2\lambda x, 2k)$
$x \in [\Gamma^{-1}_{(k,\lambda)}(0.001), \Gamma^{-1}_{(k,\lambda)}(0.999)]$, $y \in [0, \gamma_{(k,\lambda)}(\frac{k-1}{\lambda})]$

Eksempel: $Y1 = 24 \times ChiPD(24x, 8)$, $x \in [0.035, 1.09]$, $y \in [0, 2.69]$

Eksempel: $T \sim \gamma_{(4,12)}(t)$



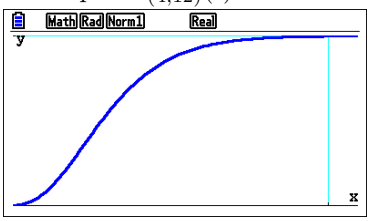
Gamma-fordeling (CDF): $\Gamma_{(k,\lambda)}(t)$

Menu, 5: Graph, OPTN, F6: ▷, F3: STAT, F1: DIST,
F3: CHI, F2: Ccd

Allment: $Y1 = ChiCD(0, 2\lambda x, 2k)$
$x \in [\Gamma^{-1}_{(k,\lambda)}(0.001), \Gamma^{-1}_{(k,\lambda)}(0.999)]$, $y \in [0, 1]$

Eksempel: $Y1 = ChiCD(0, 24x, 8)$, $x \in [0.035, 1.09]$, $y \in [0, 1]$

Eksempel: $\Gamma_{(4,12)}(t)$



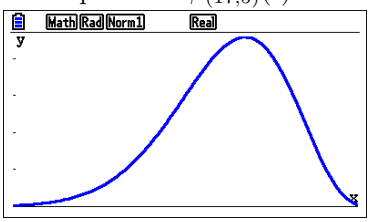
Beta-fordeling (pdf): $X \sim \beta_{(a,b)}(t)$

Menu, 5: Graph, OPTN, F6: ▷, F3: STAT, F1: DIST,
F4: F, F1: Fpd

Allment: $Y1 = \frac{ab}{(a-ax)^2} \times FPD(\frac{bx}{a(1-x)}, 2a, 2b)$
$x \in [I^{-1}_{(a,b)}(0.001), I^{-1}_{(a,b)}(0.999)]$, $y \in [0, \beta_{(a,b)}(\frac{a-1}{a+b-2})]$

Eksempel: $Y1 = \frac{85}{(17-17x)^2} \times FPD(\frac{5x}{17(1-x)}, 34, 10)$, $x \in [0.45, 0.97]$, $y \in [0, 4.59]$

Eksempel: $X \sim \beta_{(17,5)}(t)$



Beta-fordeling (CDF): $I_{(a,b)}(x)$

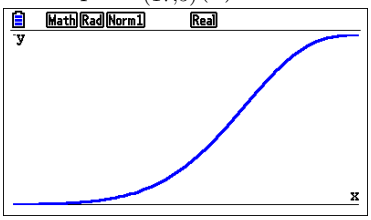
Menu, 5: Graph, OPTN, F6: ▷, F3: STAT, F1: DIST,
F4: F, F2: Fcd

Allment: $Y1 = FCD(0, \frac{bx}{a(1-x)}, 2a, 2b)$

$x \in [I^{-1}_{(a,b)}(0.001), I^{-1}_{(a,b)}(0.999)]$, $y \in [0, 1]$

Eksempel: $Y1 = FCD(0, \frac{5x}{17(1-x)}, 34, 10)$, $x \in [0.45, 0.97]$, $y \in [0, 1]$

Eksempel: $I_{(17,5)}(x)$



Binomisk fordeling (pdf): $X \sim bin_{(n,p)}(x)$

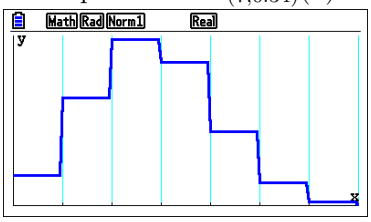
Menu, 5: Graph, OPTN, F6: ▷, F3: STAT, F1: DIST,
F5: BINOMIAL, F1: Bpd

Allment: $Y1 = BinomialPD(Int\ x, n, p)$ (OPTN, F5: NUMERIC, F2: Int)

$x \in [0, n]$, $y \in [0, bin_{(n,p)}(Int\ np)]$

Eksempel: $Y1 = BinomialPD(Int\ x, 7, 0.34)$, $x \in [0, 7]$, $y \in [0, 0.31]$

Eksempel: $X \sim bin_{(7,0.34)}(x)$



Binomisk fordeling (pdf) spredningsplott:

Man kan lage spredningsplott ved å først regne ut to lister:

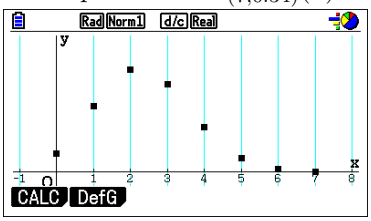
MENU, 1: Run, OPTN, F1: List, F5: Seq

Allment: $Seq(x, x, 0, n, 1) \rightarrow List\ 1$ (OPTN, F1: LIST, F1: List)
$BinomialPD(List\ 1, n, p) \rightarrow List\ 2$

Eksempel: $Seq(x, x, 0, 7, 1) \rightarrow List\ 1$
$BinomialPD(List\ 1, 7, 0.34) \rightarrow List\ 2$

MENU, 2: Statistics, F1: GRAPH, F6: SET
(Graph Type: Scatter, Xlist: List 1, Ylist: List 2, Frequency: 1)
EXIT, F1: GRAPH1

Eksempel: $X \sim bin_{(7,0.34)}(x)$



Binomisk fordeling (CDF): $BIN_{(n,p)}(x)$

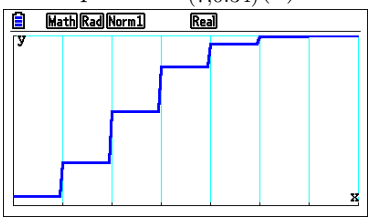
Menu, 5: Graph, OPTN, F6: ▷, F3: STAT, F1: DIST,
F5: BINOMIAL, F2: Bcd

Allment: $Y1 = BinomialCD(Int\ x, n, p)$

$x \in [0, n]$, $y \in [0, 1]$

Eksempel: $Y1 = BinomialCD(Int\ x, 7, 0.34)$, $x \in [0, 7]$, $y \in [0, 1]$

Eksempel: $BIN_{(7,0.34)}(x)$



Poisson-fordeling (pdf): $X \sim pois_{\lambda}(x)$

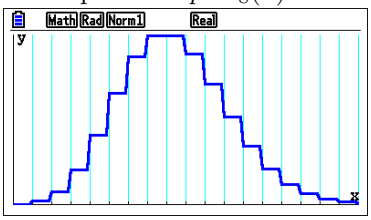
Menu, 5: Graph, OPTN, F6: ▷, F3: STAT, F1: DIST, F6: ▷,
F1: POISSON, F1: Ppd

Allment: $Y1 = PoissonPD(Int\ x, \lambda)$

$x \in [0, 2(\lambda + 1)]$, $y \in [0, pois_{\lambda}(Int\ \lambda)]$

Eksempel: $Y1 = PoissonPD(Int\ x, 8)$, $x \in [0, 18]$, $y \in [0, 0.14]$

Eksempel: $X \sim pois_8(x)$



Poisson-fordeling (CDF): $POIS_{\lambda}(x)$

Menu, 5: Graph, OPTN, F6: ▷, F3: STAT, F1: DIST, F6: ▷,
F1: POISSON, F2: Cpd

Allment: $Y1 = PoissonCD(Int\ x, \lambda)$

$x \in [0, 2(\lambda + 1)]$, $y \in [0, 1]$

Eksempel: $Y1 = PoissonCD(Int\ x, 8)$, $x \in [0, 18]$, $y \in [0, 1]$

Eksempel: $POIS_8(x)$