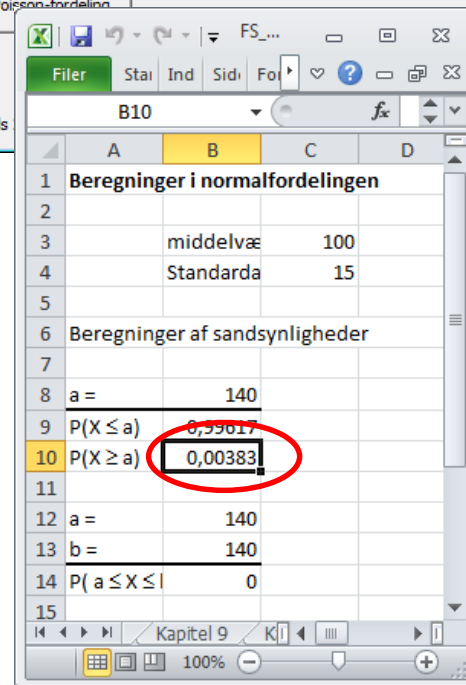
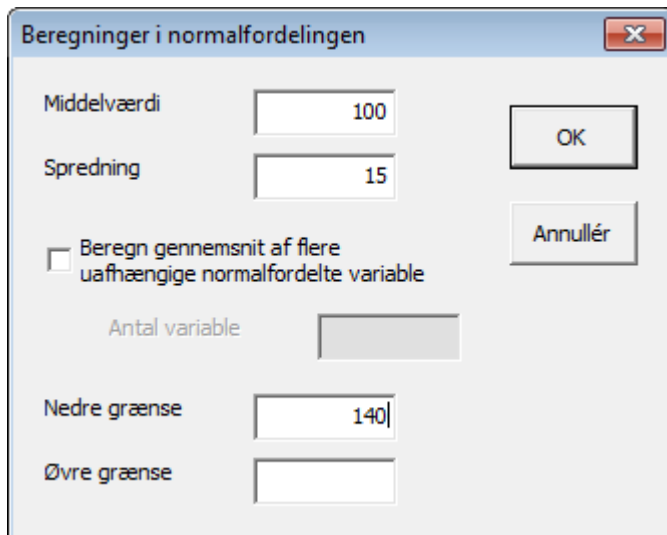
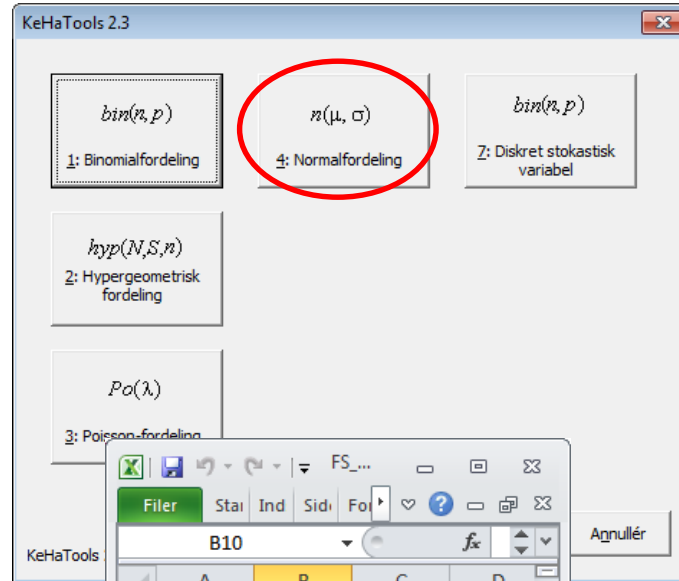
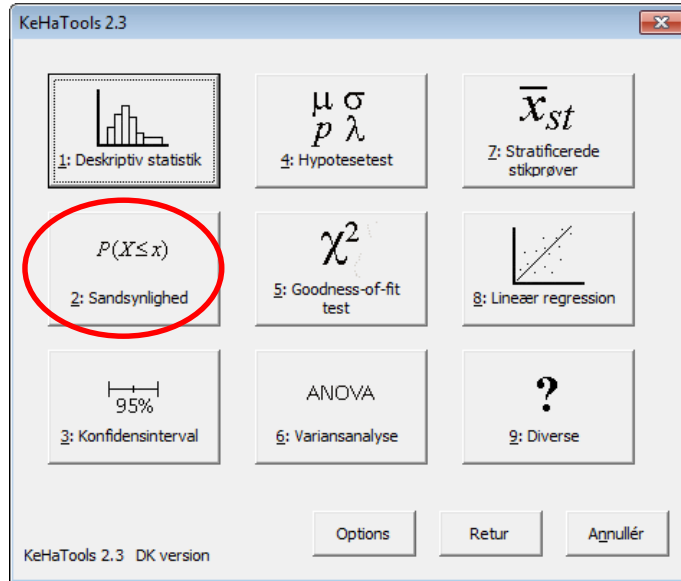


Videregående Statistik og KeHaTools Kapitel 10: Normalfordelingen

Oversigt

- Eksempel 10.2 beregning i normalford.
- Eksempel 10.3 bestemmelse af μ
- Eksempel 10.4 bestemmelse af σ
- Eksempel 10.7 middelværdi af uafh.
normalfordelte størrelser

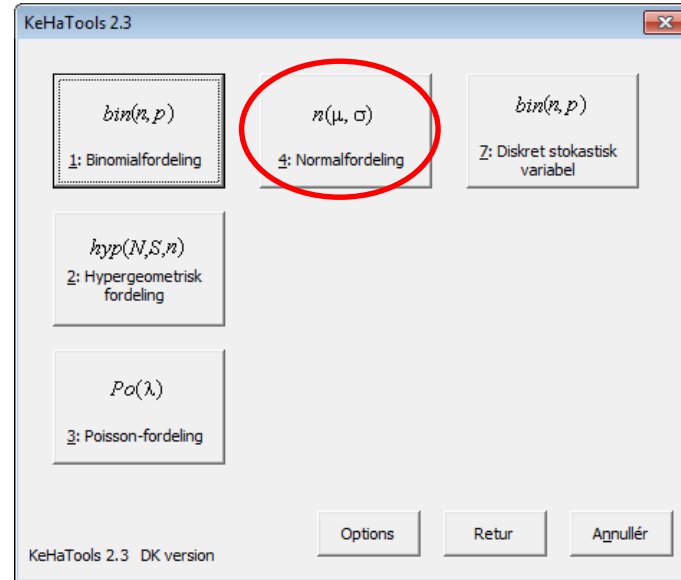
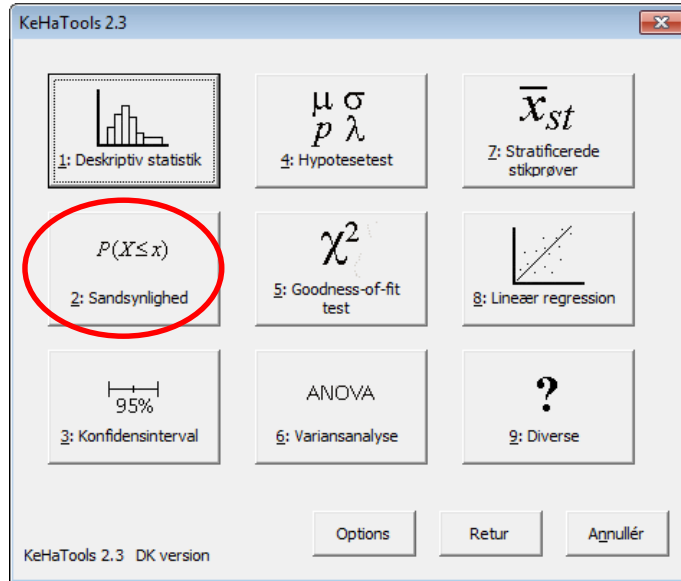
Eksempel 10.2



Eksempel 10.3 - I

- Ideen er at beregne en eller anden sandsynlighed med de givne oplysninger og en vilkårlig middelværdi
- og derefter anvende målsøgning til at finde den rette middelværdi

Eksempel 10.3 - II



Beregninger i normalfordelingen

Middelværdi

Spredning

Beregn gennemsnit af flere uafhængige normalfordelte variable

Antal variable

Nedre grænse

Øvre grænse

OK

Annullér

Eksempel 10.3 - III

The screenshot shows the Microsoft Excel interface with the 'Data' tab selected in the ribbon. The 'What-if-analyse' option is highlighted in the 'Dataværktøjer' group. The spreadsheet contains the following data:

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1	Beregninger i normalfordelingen															
2																
3		middelvæ	500													
4		Standarda	3													
5																
6	Beregninger af sandsynligheder															
7																
8	a =	500														
9	$P(X \leq a)$	0,5														
10	$P(X \geq a)$	0,5														
11																
12	a =	500														
13	b =	500														
14	$P(a \leq X \leq b)$	0														
15																
16																
17																

Fanebladet *Data*, menupunktet *What-if-analyse*, undermenuen *Målsøgning*

Eksempel 10.3 - IV

The image shows a Microsoft Excel spreadsheet titled "FS_Data.xlsx M.." with the following data:

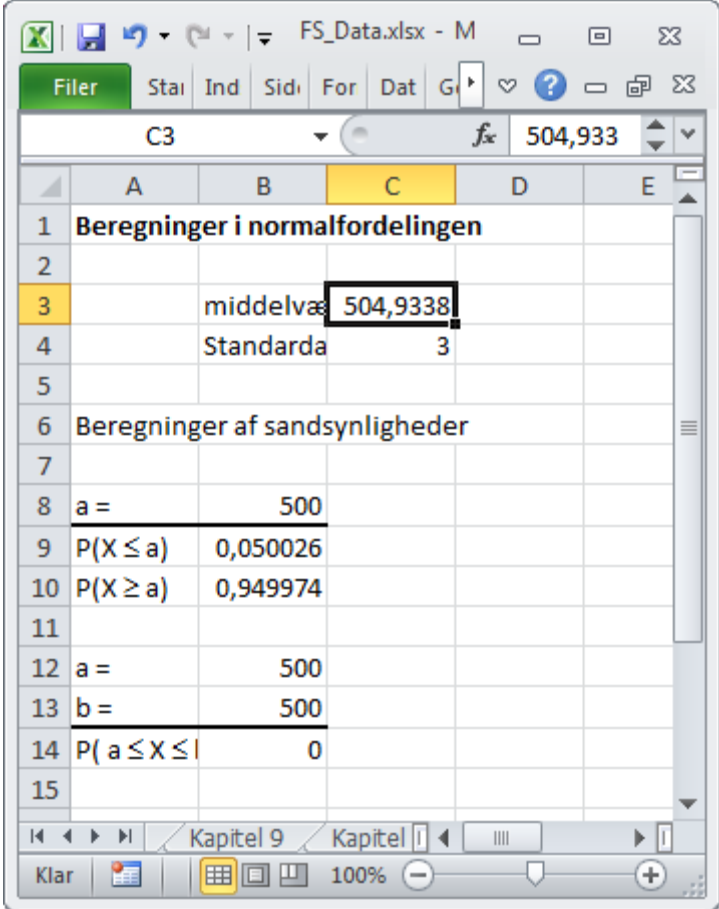
	A	B	C	D	E
1	Beregninger i normalfordelingen				
2					
3		middelvæ	500		
4		Standarda	3		
5					
6	Beregninger af sandsynligheder				
7					
8	a =	500			
9	$P(X \leq a)$	0,5			
10	$P(X \geq a)$	0,5			
11					
12	a =	500			
13	b =	500			
14	$P(a \leq X \leq b)$	0			
15					
16					

The spreadsheet also features a "Målsøgning" (Goal Seek) dialog box with the following settings:

- Angiv celle: $\$B\9
- Til værdi: 0,05
- Ved ændring af celle: $\$C\3

Red arrows indicate the mapping between the dialog box and the spreadsheet: one arrow points from the "Angiv celle" field to cell B9, another from the "Til værdi" field to cell C9, and a third from the "Ved ændring af celle" field to cell C3.

Eksempel 10.3 - V



The screenshot shows an Excel spreadsheet with the following data:

	A	B	C	D	E
1	Beregninger i normalfordelingen				
2					
3		middelvæ	504,9338		
4		Standarda	3		
5					
6	Beregninger af sandsynligheder				
7					
8	a =	500			
9	$P(X \leq a)$	0,050026			
10	$P(X \geq a)$	0,949974			
11					
12	a =	500			
13	b =	500			
14	$P(a \leq X \leq b)$	0			
15					

The spreadsheet interface includes a menu bar (Filer, Start, Indlæs, Sider, For, Dat, G), a formula bar showing 'C3' and 'fx 504,933', and a status bar at the bottom showing 'Kapitel 9', 'Kapitel 1', and '100%'.

Eksempel 10.4 - I

- Ganske som eksempel 10.3

	A	B	C	D	E
1	Beregninger i normalfordelingen				
2					
3		middelvæ	503		
4		Standarda	7		
5					
6	Beregninger af sandsynligheder				
7					
8	a =	500			
9	P(X ≤ a)	0,334118			
10	P(X ≥ a)	0,665882			
11					
12	a =	500			
13	b =	500			
14	P(a ≤ X ≤ b)	0			
15					

Målsøgning

Angiv celle:

Til værdi:

Ved ændring af celle:

OK Annuller

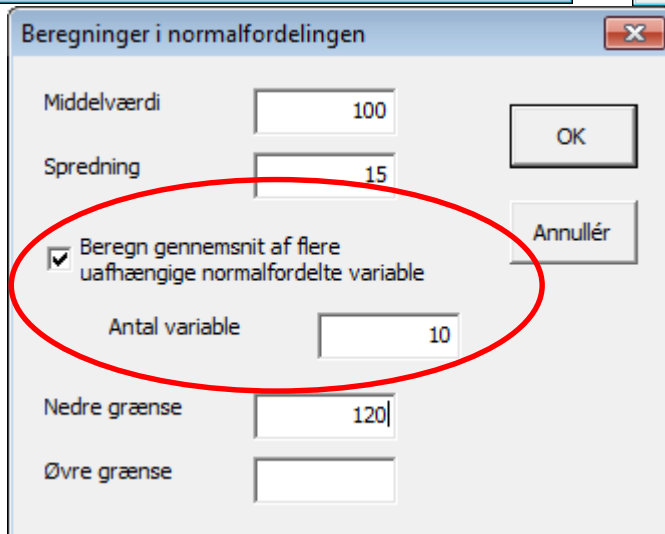
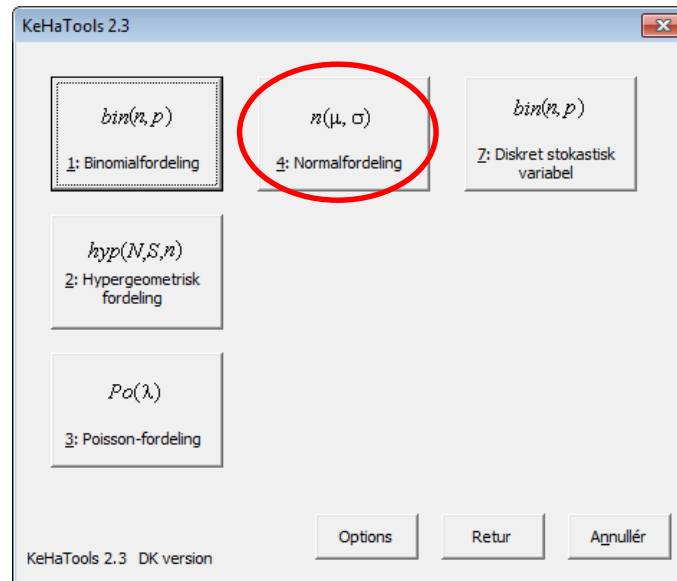
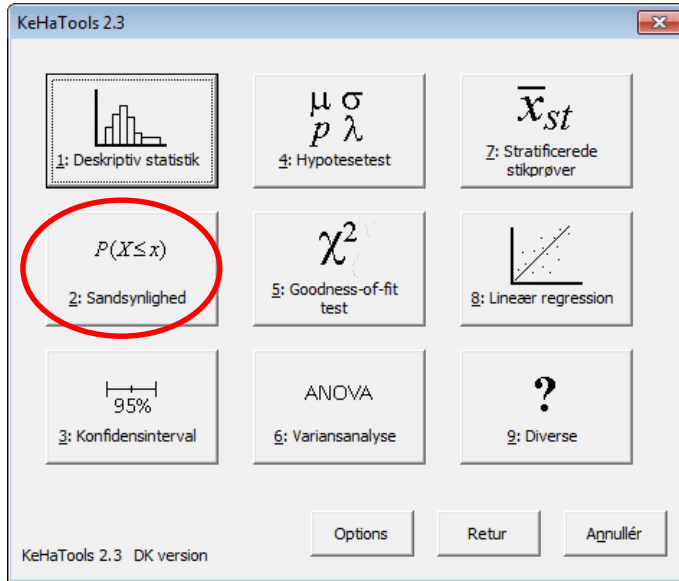
Eksempel 10.4 - II

The screenshot shows an Excel spreadsheet with the following data:

	A	B	C	D	E
1	Beregninger i normalfordelingen				
2					
3		middelvæ	503		
4		Standarda	2,342918		
5					
6	Beregninger af sandsynligheder				
7					
8	a =	500			
9	$P(X \leq a)$	0,100193			
10	$P(X \geq a)$	0,899807			
11					

The formula bar shows the value 2,342918 for cell C4.

Eksempel 10.7 - I



Eksempel 10.7 - II

The screenshot shows an Excel spreadsheet with the following content:

	A	B	C	D
1	Beregninger i normalfordelingen			
2	Beregning af middelværdi af flere uafhængige			
3				
4		middelvæ	100	
5		Standardda	15	
6		antal varia	10	
7				
8	Beregninger af sandsynligheder			
9				
10	a =	120		
11	P(X ≤ a)	0,999988		
12	P(X ≥ a)	1,24E-05		
13				
14	a =	120		
15	b =	120		
16	P(a ≤ X ≤ b)	0		
17				

The status bar at the bottom shows 'Kapitel 9', 'Kap', and a zoom level of 100%.