We are loosing brain mass as we age. Use linear regression to calculate the rate of brain loss.

Sex	Age (yrs)	Brain weight (g)
Females	23	1,590
Females	30	1,500
Females	32	1,303
Females	72	1,285
Females	43	1,210
Females	42	1,430
Females	47	1,185
Females	53	1,310
Females	57	1,380
Females	62	1,350
Females	64	1,240
Females	72	1,160
Females	39	1,400
Females	90	970
Females	85	1,180
Females	89	1,190
Females	90	1,040
Females	80	1,310
Females	93	1,120
Males	22	1,750
Males	28	1,540
Males	37	1,616
Males	39	1,550
Males	40	1,620
Males	43	1,560
Males	48	1,390
Males	54	1,670
Males	55	1,460
Males	60	1,500
Males	67	1,330
Males	70	1,300
Males	74	1,390
Males	81	1,390
Males	84	1,280
Males	87	1,330

In this tutorial you will learn how to go from this table to

THAT

$y = -5.284x + 1594.6$
$R^2 = 0.6162$

Figure 1: Change in brain weight over a life span in adult females.

$y = -5.8556x + 1805.1$
$R^2 = 0.6878$

Figure 2: Change in brain weight over a life span in adult males.

1- Make 2 XY (scatter) graphs: one for the males and one for the females.

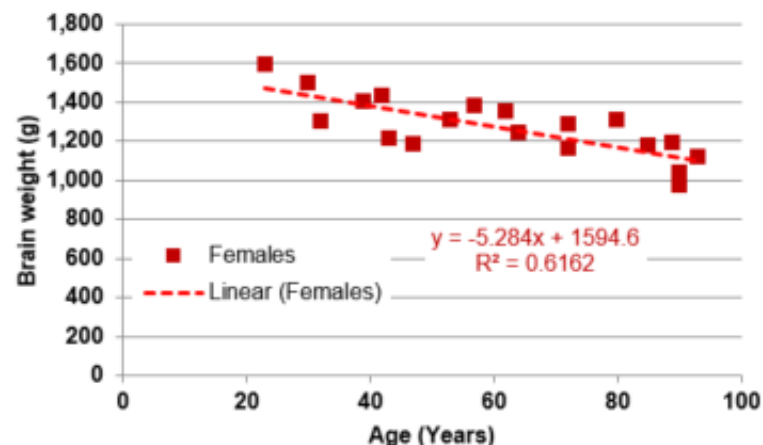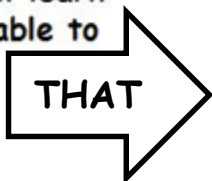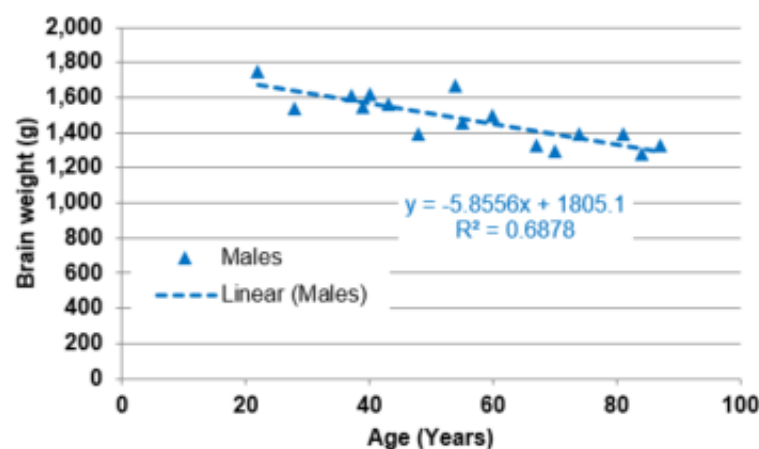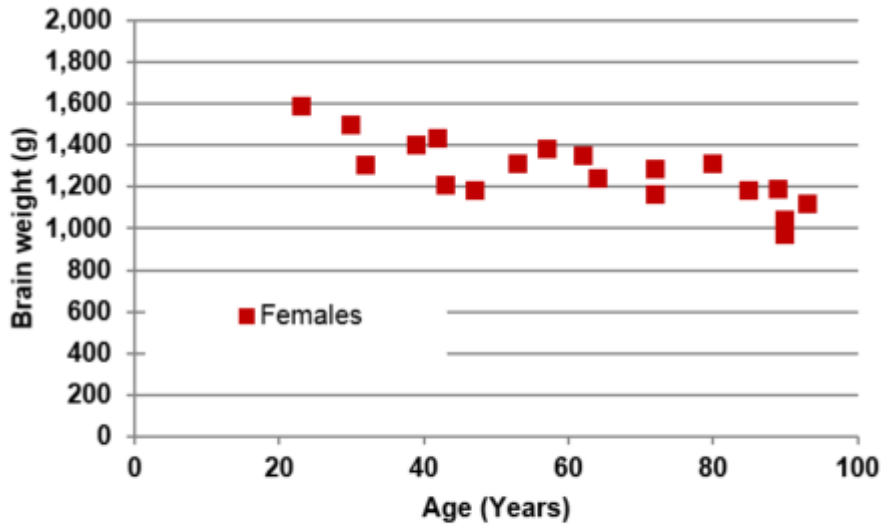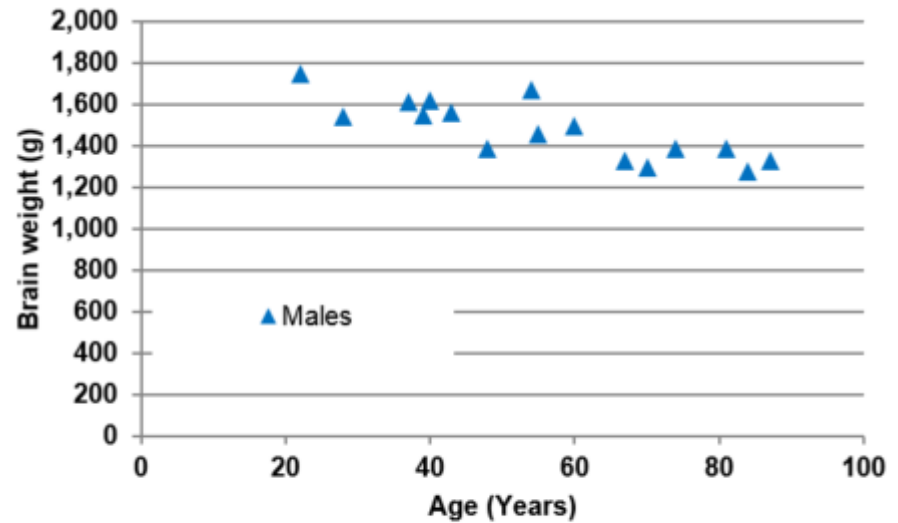- You learned how to do XY scatter graphs in **tutorial "Excel 7"**

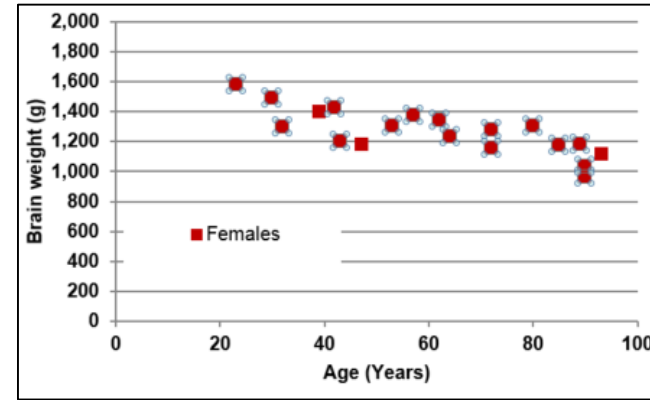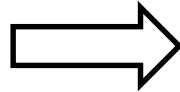Figure 1: Change in brain weight over a life span in adult females.

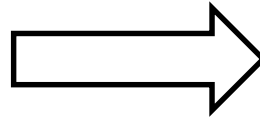Figure 2: Change in brain weight over a life span in adult males.

2- Draw the linear trendline for the females and calculate its equation.

2-a With your mouse, left-click on any one of the data points plotted on the graph. All the data points are selected

2-b Then right way, without changing the position of your cursor, right-click your mouse. A window appears.

2-c Click on "Add Trendline". Another window will appear.

2-d Tick "Linear"; "Display Equation on chart"; "Display R-squared value on chart";

◢ **TRENDLINE OPTIONS**

- ○ Exponential
- ◉ Linear
- ○ Logarithmic
- ○ Polynomial   Order   2
- ○ Power
- ○ Moving Average   Period   2

Trendline Name

- ◉ Automatic   Linear (Females)
- ○ Custom

Forecast

Forward   0.0   periods
Backward   0.0   periods

- ☐ Set Intercept   0.0
- ☐ Display Equation on chart
- ☐ Display R-squared value on chart

2- Draw the linear trendline for the females and calculate its equation.

2-e The linear trendline as well as its equation and R-squared appear on the chart";
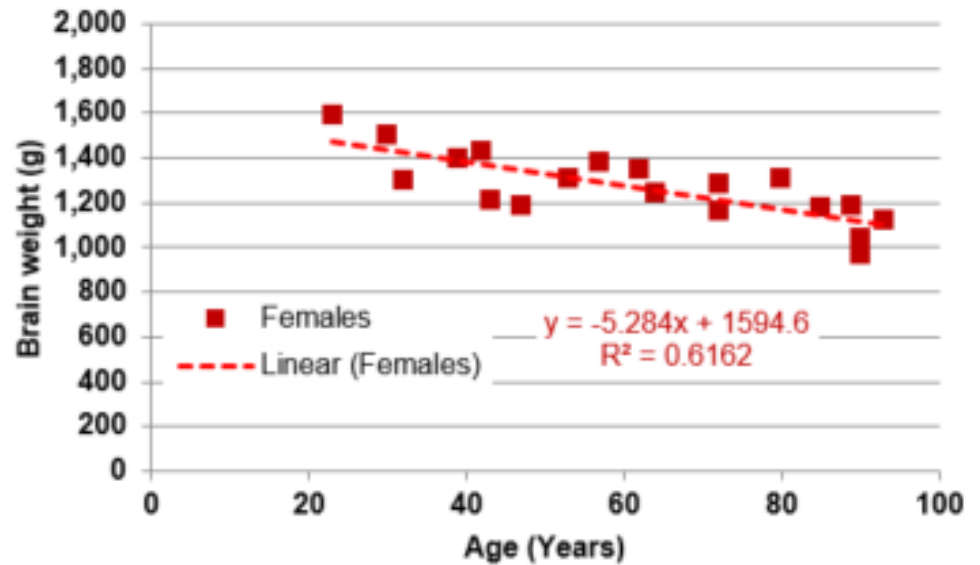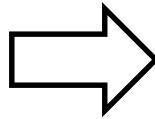

Figure 1: Change in brain weight over a life span in adult females.

3- Draw the linear trendline for the males and calculate its equation.

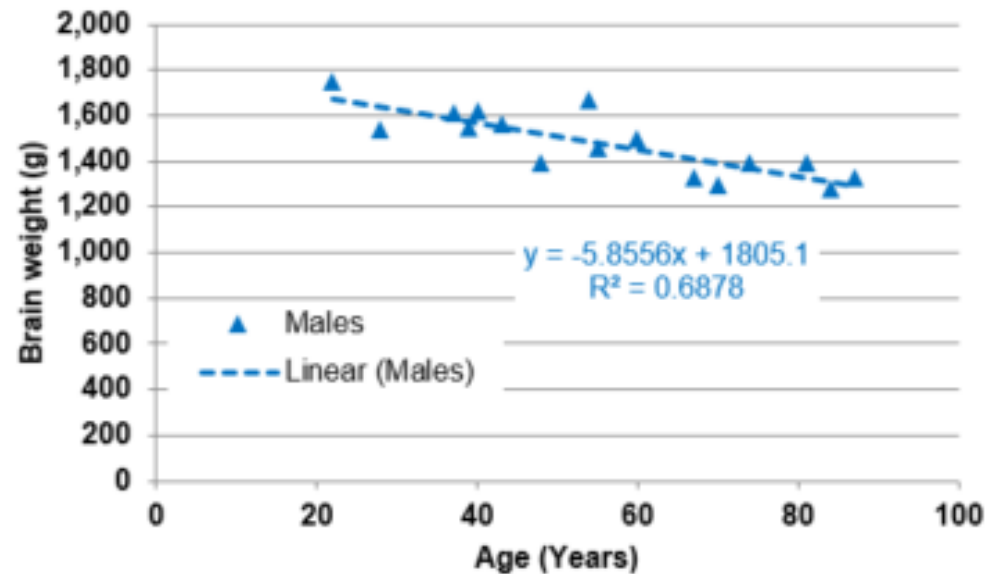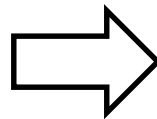**Repeat the steps 2-a to 2-e but this time using the males' data.**

Figure 2: Change in brain weight over a life span in adult males.