

# Statistics

## Lecture 13



Feb 19-8:47 AM

Class QZ 4

Use the chart below to find

Class MP	Class F
13	5
25	10
37	15
49	8
61	2

$\checkmark 1) \bar{x} = 34.6 \approx 35$  } Whole #  
 $\checkmark 2) S \approx 12.508 = 13$   
 $\rightarrow 3) n = 40$   
 $4) S^2 = \frac{10656}{65}$  } Reduced Fraction

**Clear All lists**  
 class MP  $\rightarrow$  L1  
 class F  $\rightarrow$  L2

**STAT**  $\rightarrow$  **CALC**  
**1:1-Var Stats**  
 Use L1 & L2

**VARs** **5:Statistics** **3:Σx**  
**χ<sup>2</sup>** **MATH** **1:▸frac** **Enter**

Sep 16-9:49 AM

Given

class MP	class F
17	4
25	6
33	13
41	22
49	5

1) How many classes? 5

2) class width 8

3) Sample Size  
 $n = \sum f = 50$

4)  $\bar{x} = 35.88$   
 $S = 8.668$   
 $n = 50$

5)  $S^2$  in reduced fraction  
 $S^2 = \frac{92032}{1225}$

Sep 17-8:54 AM

Consider the Sample below

15 18 19 20 23  
 24 25 25 25 28  
 30 32 32 32 35  
 39 42 45 48 48  
 50 53 57 60 65

1)  $n = 25$

2) Range =  $65 - 15 = 50$

3) Estimate  $S \approx \frac{\text{Range}}{4}$   
 $= \frac{50}{4} = 12.5$

4) Make STEM Plot

1	589
2	0345558
3	022259
4	2588
5	037
6	05

Find  $P_{40}$

$L = \frac{40}{100} \cdot 25 = 10$

$P_{40} = \frac{10\text{th} + 11\text{th}}{2} = \frac{28 + 30}{2} = 29$

Find  $P_{71}$

$L = \frac{71}{100} \cdot 25 = 17.75$   $L = 18$

$P_{71} = 18\text{th element} = 45$

Find  $k$  such that  $P_k = 50$

$P_{80} = 50$

$k = \frac{B}{n} \cdot 100 = \frac{20}{25} \cdot 100 = 80$

Sep 17-9:04 AM

15	18	19	20	23	Find the 5-number Summary Min = 15 Q <sub>1</sub> = 24.5 Med. = 32 Q <sub>3</sub> = 48 Max = 65
24	25	25	25	28	
30	32	32	32	35	
39	42	45	48	48	
50	53	57	60	65	

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Working with ordered-Pairs (x,y) Scatter Plot

x	y
1	3
2	4
3	5
4	7
5	9

Clear all lists  
 $x \rightarrow L1, y \rightarrow L2$

$\sum x = 15$   
 $\sum x^2 = 43$   
 $n = 5$   
 $\sum y = 28$   
 $\sum y^2 = 180$   
 $\sum xy = 87$

[STAT] → [CALC]  
 [2: 2-Var Stats]  
 Xlist: L1  
 Ylist: L2  
 Freq List: [Clear]  
 [Calculate]

} L1, L2  
 [↵]  
 [Enter]

Sep 17-9:20 AM

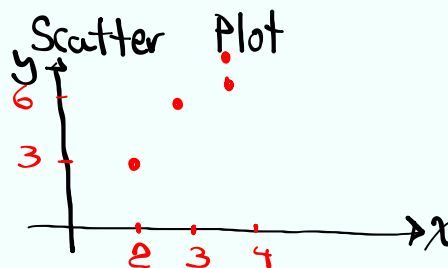
Complete the chart below

x	y	x <sup>2</sup>	y <sup>2</sup>	xy
2	3	4	9	6
3	6	9	36	18
4	10	16	100	40
4	8	16	64	32

- 1)  $n=4$
- 2)  $\sum x=13$
- 3)  $\sum x^2=45$
- 4)  $\sum y=27$
- 5)  $\sum y^2=209$
- 6)  $\sum xy=96$

x → L1, y → L2

**STAT** → **CALC**  
**2: 2-Var Stats**  
 L1 & L2



Sep 17-9:28 AM

**STAT** → **CALC**

8: Lin Reg(a+bx)

Xlist: L1

Ylist: L2

} L1, L2

**7**

**clear**

**Enter**

**Calculate**

$a = -3$

$b = 3$

$r^2 = .925$

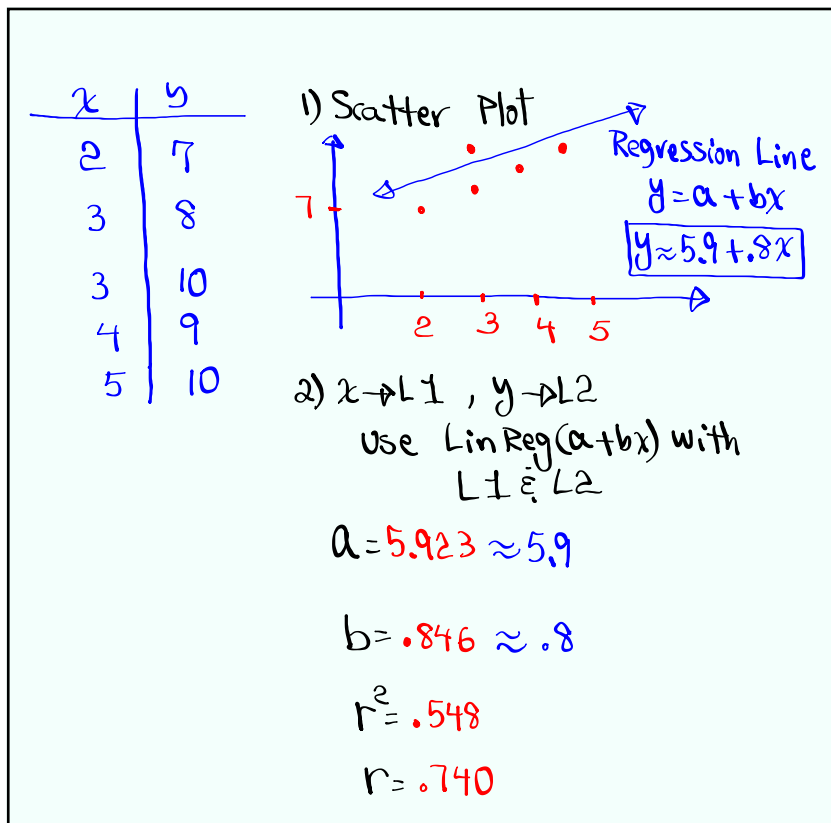
$r = .962$

If r & r<sup>2</sup> are missing,

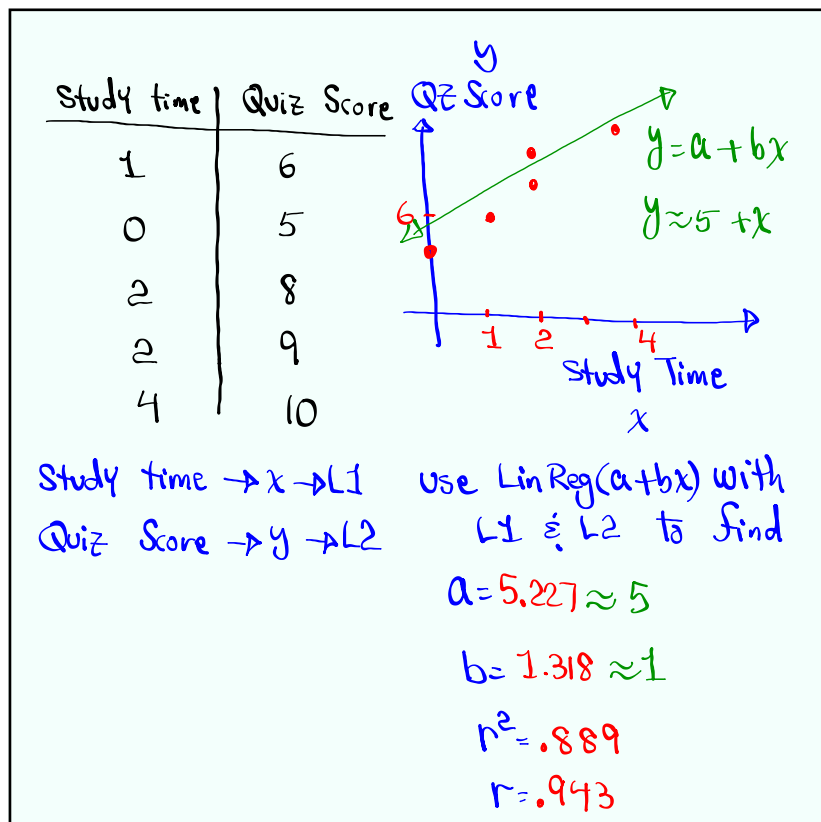
**2nd** **0** ↓ ↓ ↓ ... ↓

▶ **DiagnosticOn** **Enter** **Enter**

Sep 17-9:37 AM



Sep 17-9:43 AM



Sep 17-9:50 AM