

Warmup 1/9/13

The table below shows the price of petrol and the number of customers per hour for sixteen petrol stations.

Petrol price (x cents per litre)	105.9	106.9	109.9	104.5	104.9	111.9	110.5	112.9
Number of customers (y)	45	42	25	48	43	15	19	10
Petrol price (x cents per litre)	107.5	108.0	104.9	102.9	110.9	106.9	105.5	109.5
Number of customers (y)	30	23	42	50	12	24	32	17

-4.27
1. Calculate r and r^2 for the data:

$$r = -0.9237$$

$$r^2 = 0.8533$$

2. Describe the relationship between the petrol price and the number of customers

* Strong negative correlation (As price rises, customers lessen)

3. Use technology to find the line of best fit

4. Interpret the gradient (slope) of this line.

$$-4.27$$

5. Estimate the number of customers per hour for a petrol station which sells petrol at 108.5 cents per litre

26.5 customers

Do a Linear Regression Test

(X) practice hours	50	75	79	101	115	125	135	155	165
(y) Lap times(sec)	10.75	9.85	9.80	9.01	8.59	8.20	7.97	7.50	8.02

1.) Find r : r^2 :

2.) what is the relationship:

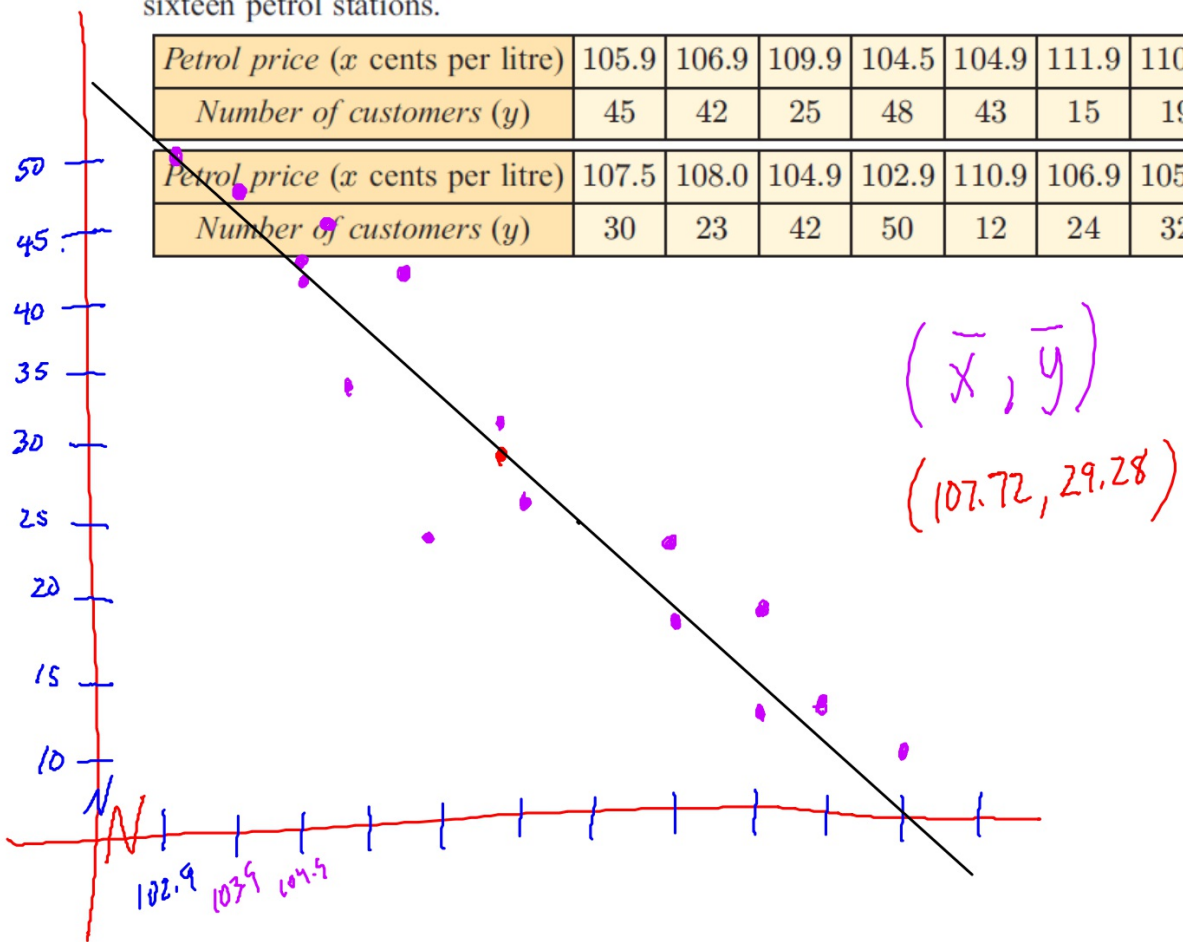
3.) what is the equation of the line of best fit?

5(c) $[(\neg r \vee q) \Rightarrow (q \Leftrightarrow p)'] \Rightarrow (p \wedge \neg r)$ 2^{3-8}

				a		b				
p	q	r	$\neg r$	$\neg r \vee q$	$q \Leftrightarrow p$	$(q \Leftrightarrow p)'$	$a \Rightarrow b$	$p \wedge \neg r$	$(a \Rightarrow b) \Rightarrow (p \wedge \neg r)$	
T	T	T	F	T	T	F	F	F	T	
T	T	F	T	T	T	F	F	T	T	
T	F	T	F	F	F	T	T	F	F	
T	F	F	T	T	F	T	T	T	T	
F	T	T	F	T	F	T	T	F	F	
F	T	F	T	T	F	T	T	F	F	
F	F	T	F	F	T	F	T	F	F	
F	F	F	T	T	T	F	F	F	T	

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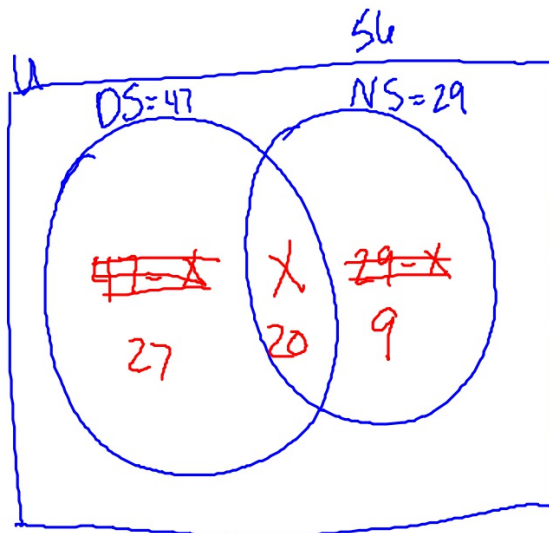
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56 ppl work on assembly line

47 day shift

29 work night shift



$$47 - x + x + 29 - x = 56$$

$$76 - x = 56$$

$$\begin{array}{r} -76 \\ \hline \end{array}$$

$$-x = -20$$

$$x = 20$$

$$(q \wedge r) \wedge p'$$

