

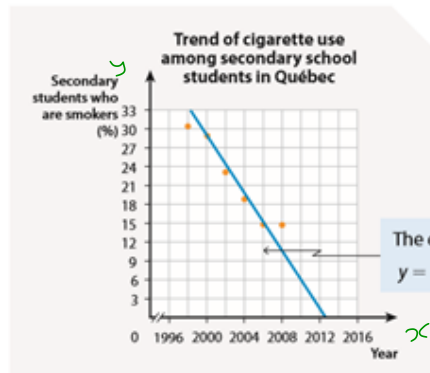
P149 Lesson 7: Using The Regression to Find a Value of y Given x

3 The following data concerns cigarette use between 1998 and 2008 among secondary students in Québec.

Trends of cigarette use among secondary school youth in Québec

Year	Secondary students who are smokers (%)
1998	30.4
2000	29.0
2002	23.1
2004	18.8
2006	14.9
2008	14.7

x y



unpacking a complex task  
 • read one complete sentence at a time.  
 • read titles of charts and graphs  
 • clearly define x and y.

a) From this regression line, estimate the percentage of secondary students who smoked in Québec in 2007.

x = years  
 y = % of smokers

y = ?

x

$y = -2.3x + 4629$

step i: sub in  
 x = 2007

$y = -2.3(2007) + 4629$

y = 12.9

% of students who smoke is 12.9% in year 2007

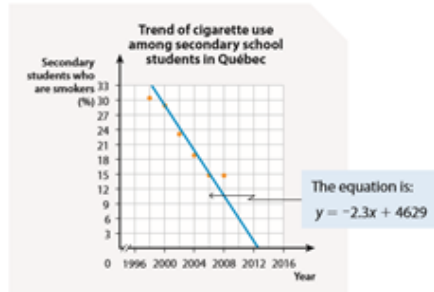
Q

Limits of Regression Limits → only an estimate  
→ because correlation ≠ causation

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only use RL for correlation w medium or higher strength

the less stronger a correlation, (reliable) the less accurate RL

interpolation when finding y for x that among data points

extrapolation when finding y for x that's not among data point

careful cause can't guaranteed validity

$x = 2030$

$y = -40\%$  → adjust for context when extrapolation.

$y = 0\%$  → pas sûr

The following data is collected by a school.

Determine  
 2) the result Sophie should obtain in mathematics, knowing she obtained 90% in physics.

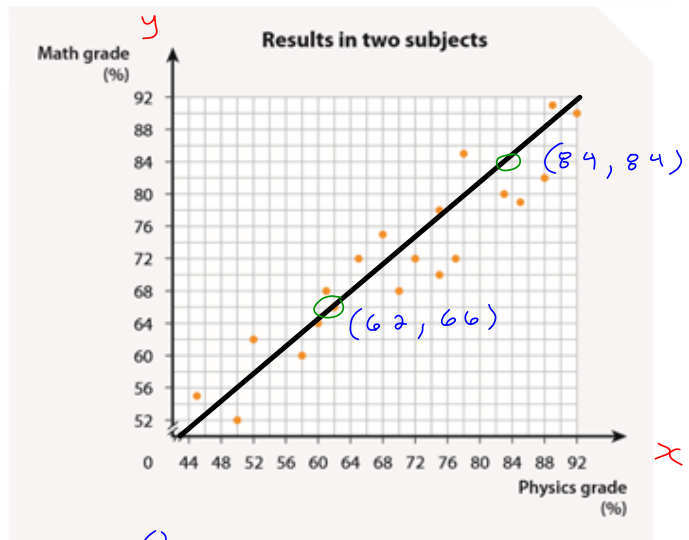
$x = \text{grades in Physics}$

$y = \text{grades in Math}$

→ need an equation

→ don't have one?

→ draw RL.



0  
 |  
 break in axis → start at minimum (not zero)

Pg 166 #2

Pg 158 #6 → graduation of axis  
→ don't start at  
zero  
→ start at minimum.

P 153 #6

P 156 #2

P 165 #1

P 170-171 #6 - #7