Regression Worksheet #1

Consider the following data:

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Hrs Studied / week(x) | 5 | 6.5 | 9 | 11.5 | 13 | 15 | 19.5 | 20 | 24.5 |
| GPA (y) | 2.01 | 2.13 | 3.01 | 3.21 | 3.42 | 3.41 | 3.66 | 3.87 | 3.99 |

Please compute these summary statistics:

|  |  |  |  |
| --- | --- | --- | --- |
| ∑x | ∑y | ∑x2 | ∑y2 |
| ∑xy |  |  | (blank) |

Use the above quantities to compute, and round to six decimals,

|  |  |  |
| --- | --- | --- |
| m | b | r |

Now compute these:

|  |  |  |  |
| --- | --- | --- | --- |
| EV | UV | TV | R2 |

Verify the relationship between EV, UV and TV.

Verify the relationship between r and R2.

Please report the residuals corresponding to these x values:

|  |  |  |  |
| --- | --- | --- | --- |
| 5 | 9 | 15 | 20 |

What would be the increase in GPA, on average, for a one-hour increase in studying per week?