**INTERPRETATION OF OUTPUTS FOR REGRESSION**

**SIMPLE LINEAR REGRESSION**

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| **Model Summary** | | | | |
| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
| 1 | .815a | **.664** | .622 | 1.0018 |
| a. Predictors: (Constant), Miles | | | | |

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| **ANOVAa** | | | | | | |
| Model | | Sum of Squares | df | Mean Square | F | Sig. |
| 1 | Regression | 15.871 | 1 | 15.871 | 15.815 | **.004b** |
| Residual | 8.029 | 8 | 1.004 |  |  |
| Total | 23.900 | 9 |  |  |  |
| a. Dependent Variable: Time | | | | | | |
| b. Predictors: (Constant), Miles | | | | | | |

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| **Coefficientsa** | | | | | | |
| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
| B | Std. Error | Beta |
| 1 | (Constant) | **1.274** | 1.401 |  | .909 | .390 |
| Miles | **.068** | .017 | .815 | 3.977 | .004 |
| a. Dependent Variable: Time | | | | | | |

a) From the *Coefficients output:*slope b1=.068   
y-intercept b0=1.274

Estimated Regression Equation is: ŷ = b0 + b1x  
ŷ = 1.274 + .068x(where x=*miles travelled*; y=*time taken*)

**For an interpretation of the slope, y-intercept & coefficient of determination - see CHAPTER 7 - SLIDE #16**

**MULTIPLE LINEAR REGRESSION**

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| **Model Summary** | | | | |
| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
| 1 | .904a | **.817** | .816 | .8300 |
| a. Predictors: (Constant), Deliveries, Miles | | | | |

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| **ANOVAa** | | | | | | |
| Model | | Sum of Squares | df | Mean Square | F | Sig. |
| 1 | Regression | 915.516 | 2 | 457.758 | 664.529 | **.000b** |
| Residual | 204.587 | 297 | .689 |  |  |
| Total | 1120.103 | 299 |  |  |  |
| a. Dependent Variable: Time | | | | | | |
| b. Predictors: (Constant), Deliveries, Miles | | | | | | |

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| **Coefficientsa** | | | | | | |
| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
| B | Std. Error | Beta |
| 1 | (Constant) | **.127** | .205 |  | .621 | .535 |
| Miles | **.067** | .002 | .679 | 27.366 | **.000** |
| Deliveries | **.690** | .030 | .580 | 23.373 | **.000** |
| a. Dependent Variable: Time | | | | | | |

a) From the *Coefficients* output  
b1 = .067 (slope for the independent variable x1)  
b2 = .690 (slope for the independent variable x2)  
y-intercept is b0 = .127;

c) Estimated Regression Equation: ŷ = b0 + b1x1 + b2x2    
ŷ = .127 + .067x1 + .690x2 (where x1=miles; x2=deliveries; y=time)

**For an interpretation of the slopes, y-intercept & coefficient of determination, see CHAPTER 7 - SLIDE #47**

**HYPOTHESIS TESTING FOR MULTIPLE REGRESSION - SEE CHAPTER 7 - SLIDE #51**

**Hypothesis testing is done to see if there is a significant relationship between the dependent variable and each independent variable.**