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L1F21BSCS0379

Question 1:

1. 88% strong connection

2. 77.4% dependent variable variance shown by independent

3. Significant F 0.0017 < 0.05 so significant

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|  | *Regression Statistics* | |  |  |  |  |  |  |  |  |  |
|  | Multiple R | 0.880123531 |  |  |  |  |  |  |  |  |  |
|  | R Square | 0.774617431 |  |  |  |  |  |  |  |  |  |
|  | Adjusted R Square | 0.742419921 |  |  |  |  |  |  |  |  |  |
|  | Standard Error | 629.4861632 |  |  |  |  |  |  |  |  |  |
|  | Observations | 9 |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  | ANOVA |  |  |  |  |  |  |  |  |  |  |
|  |  | *df* | *SS* | *MS* | *F* | *Significance F* |  |  |  |  |  |
|  | Regression | 1 | 9533170.414 | 9533170.414 | 24.05830243 | 0.001743307 |  |  |  |  |  |
|  | Residual | 7 | 2773769.808 | 396252.8297 |  |  |  |  |  |  |  |
|  | Total | 8 | 12306940.22 |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | *Coefficients* | *Standard Error* | *t Stat* | *P-value* | *Lower 95%* | *Upper 95%* | *Lower 95.0%* | *Upper 95.0%* |  |  |
|  | Intercept | 181.6611021 | 272.1102673 | 0.667601057 | 0.525778436 | -461.777435 | 825.0996392 | -461.777435 | 825.0996392 |  |  |
|  | X Variable 1 | 7.318708211 | 1.492113785 | 4.904926343 | 0.001743307 | 3.790419769 | 10.84699665 | 3.790419769 | 10.84699665 |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |

4. y' = 181.6611 + 7.3187x

Question 2:

1. 81% strong connection

2. 66.1% dependent variable variance shown by independent

3. Significant F 0.049 < 0.05 so significant

4. y' = 64.5321 + 3.782956x

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| *Regression Statistics* | |  |  |  |  |  |  |  |
| Multiple R | 0.813152388 |  |  |  |  |  |  |  |
| R Square | 0.661216806 |  |  |  |  |  |  |  |
| Adjusted R Square | 0.576521008 |  |  |  |  |  |  |  |
| Standard Error | 19.49508348 |  |  |  |  |  |  |  |
| Observations | 6 |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
| ANOVA |  |  |  |  |  |  |  |  |
|  | *df* | *SS* | *MS* | *F* | *Significance F* |  |  |  |
| Regression | 1 | 2967.100214 | 2967.100214 | 7.806961123 | 0.04910643 |  |  |  |
| Residual | 4 | 1520.233119 | 380.0582797 |  |  |  |  |  |
| Total | 5 | 4487.333333 |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  | *Coefficients* | *Standard Error* | *t Stat* | *P-value* | *Lower 95%* | *Upper 95%* | *Lower 95.0%* | *Upper 95.0%* |
| Intercept | 64.53215434 | 17.68743624 | 3.648474175 | 0.021800814 | 15.42395857 | 113.6403501 | 15.42395857 | 113.6403501 |
| X Variable 1 | 3.782958199 | 1.353912301 | 2.794093972 | 0.04910643 | 0.023895017 | 7.542021381 | 0.023895017 | 7.542021381 |

Question 3:

1. 88% strong connection

2. 77.9% dependent variable variance shown by independent

3. Significant F 0.008 < 0.05 so significant

4. y' = 65.9575 + 5.38402x

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| *Regression Statistics* | |  |  |  |  |  |  |  |
| Multiple R | 0.882958755 |  |  |  |  |  |  |  |
| R Square | 0.779616163 |  |  |  |  |  |  |  |
| Adjusted R Square | 0.735539395 |  |  |  |  |  |  |  |
| Standard Error | 4.290861851 |  |  |  |  |  |  |  |
| Observations | 7 |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
| ANOVA |  |  |  |  |  |  |  |  |
|  | *df* | *SS* | *MS* | *F* | *Significance F* |  |  |  |
| Regression | 1 | 325.6568086 | 325.6568086 | 17.68768919 | 0.008443308 |  |  |  |
| Residual | 5 | 92.05747711 | 18.41149542 |  |  |  |  |  |
| Total | 6 | 417.7142857 |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  | *Coefficients* | *Standard Error* | *t Stat* | *P-value* | *Lower 95%* | *Upper 95%* | *Lower 95.0%* | *Upper 95.0%* |
| Intercept | 65.95752798 | 3.620578878 | 18.21739843 | 9.1612E-06 | 56.65053368 | 75.26452227 | 56.65053368 | 75.26452227 |
| X Variable 1 | 5.384028484 | 1.280182245 | 4.205673453 | 0.008443308 | 2.093215258 | 8.67484171 | 2.093215258 | 8.67484171 |

Question 4:

1. 76% strong connection

2. 59.1% dependent variable variance shown by independent

3. Significant F 0.025 < 0.05 so significant

4. y' = 43.1462 + 0.5746x

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| *Regression Statistics* | |  |  |  |  |  |  |  |
| Multiple R | 0.769215109 |  |  |  |  |  |  |  |
| R Square | 0.591691884 |  |  |  |  |  |  |  |
| Adjusted R Square | 0.523640532 |  |  |  |  |  |  |  |
| Standard Error | 8.989492823 |  |  |  |  |  |  |  |
| Observations | 8 |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
| ANOVA |  |  |  |  |  |  |  |  |
|  | *df* | *SS* | *MS* | *F* | *Significance F* |  |  |  |
| Regression | 1 | 702.6341127 | 702.6341127 | 8.694785066 | 0.025656469 |  |  |  |
| Residual | 6 | 484.8658873 | 80.81098122 |  |  |  |  |  |
| Total | 7 | 1187.5 |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  | *Coefficients* | *Standard Error* | *t Stat* | *P-value* | *Lower 95%* | *Upper 95%* | *Lower 95.0%* | *Upper 95.0%* |
| Intercept | 43.14621395 | 7.064484436 | 6.107482341 | 0.000878558 | 25.86004326 | 60.43238464 | 25.86004326 | 60.43238464 |
| X Variable 1 | 0.574634318 | 0.194877695 | 2.948692094 | 0.025656469 | 0.097785777 | 1.051482859 | 0.097785777 | 1.051482859 |

Question 5:

1. 88% strong connection

2. 77.9% dependent variable variance shown by independent

3. Significant F 0.019 < 0.05 so significant

4. y' = 8.1783+(- 0.01545)x

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| *Regression Statistics* | |  |  |  |  |  |  |  |
| Multiple R | 0.882871082 |  |  |  |  |  |  |  |
| R Square | 0.779461348 |  |  |  |  |  |  |  |
| Adjusted R Square | 0.724326685 |  |  |  |  |  |  |  |
| Standard Error | 1.64923519 |  |  |  |  |  |  |  |
| Observations | 6 |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
| ANOVA |  |  |  |  |  |  |  |  |
|  | *df* | *SS* | *MS* | *F* | *Significance F* |  |  |  |
| Regression | 1 | 38.45342649 | 38.45342649 | 14.1374102 | 0.019775319 |  |  |  |
| Residual | 4 | 10.87990684 | 2.719976711 |  |  |  |  |  |
| Total | 5 | 49.33333333 |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  | *Coefficients* | *Standard Error* | *t Stat* | *P-value* | *Lower 95%* | *Upper 95%* | *Lower 95.0%* | *Upper 95.0%* |
| Intercept | 8.179350498 | 1.013046993 | 8.074008957 | 0.001278311 | 5.366681132 | 10.99201986 | 5.366681132 | 10.99201986 |
| X Variable 1 | -0.015453487 | 0.004109998 | -3.75997476 | 0.019775319 | -0.026864669 | -0.0040423 | -0.026864669 | -0.004042304 |

Question 6:

1. 99% strong connection

2. 98.5% dependent variable variance shown by independent

3. Significant F 0.00007 < 0.05 so significant

4. y' = 48.5031 + 18.0307x

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| *Regression Statistics* | |  |  |  |  |  |  |  |
| Multiple R | 0.992739046 |  |  |  |  |  |  |  |
| R Square | 0.985530814 |  |  |  |  |  |  |  |
| Adjusted R Square | 0.981913517 |  |  |  |  |  |  |  |
| Standard Error | 18.69306952 |  |  |  |  |  |  |  |
| Observations | 6 |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
| ANOVA |  |  |  |  |  |  |  |  |
|  | *df* | *SS* | *MS* | *F* | *Significance F* |  |  |  |
| Regression | 1 | 95202.27661 | 95202.27661 | 272.449548 | 7.88908E-05 |  |  |  |
| Residual | 4 | 1397.723392 | 349.430848 |  |  |  |  |  |
| Total | 5 | 96600 |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  | *Coefficients* | *Standard Error* | *t Stat* | *P-value* | *Lower 95%* | *Upper 95%* | *Lower 95.0%* | *Upper 95.0%* |
| Intercept | 48.50313034 | 19.23835467 | 2.521168321 | 0.065275475 | -4.911105318 | 101.917366 | -4.911105318 | 101.917366 |
| X Variable 1 | 18.03073421 | 1.092371512 | 16.5060458 | 7.88908E-05 | 14.99782467 | 21.06364374 | 14.99782467 | 21.06364374 |

Question 7:

1. 79% strong connection

2. 63.5% dependent variable variance shown by independent

3. Significant F 0.005 < 0.05 so significant

4. y' = 1.5714 + 0.0686x

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| *Regression Statistics* | |  |  |  |  |  |  |  |
| Multiple R | 0.797302641 |  |  |  |  |  |  |  |
| R Square | 0.635691502 |  |  |  |  |  |  |  |
| Adjusted R Square | 0.59015294 |  |  |  |  |  |  |  |
| Standard Error | 6.011605692 |  |  |  |  |  |  |  |
| Observations | 10 |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
| ANOVA |  |  |  |  |  |  |  |  |
|  | *df* | *SS* | *MS* | *F* | *Significance F* |  |  |  |
| Regression | 1 | 504.484776 | 504.484776 | 13.9594109 | 0.005736277 |  |  |  |
| Residual | 8 | 289.115224 | 36.13940299 |  |  |  |  |  |
| Total | 9 | 793.6 |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  | *Coefficients* | *Standard Error* | *t Stat* | *P-value* | *Lower 95%* | *Upper 95%* | *Lower 95.0%* | *Upper 95.0%* |
| Intercept | 1.571426304 | 11.30288235 | 0.139028812 | 0.892863531 | -24.49306714 | 27.63591975 | -24.49306714 | 27.63591975 |
| X Variable 1 | 0.068637384 | 0.018370762 | 3.736229503 | 0.005736277 | 0.02627433 | 0.111000439 | 0.02627433 | 0.111000439 |