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| **Modeling Real Life Data Homework Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** **Date\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Block\_\_\_\_\_\_** |
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| --- | --- |
| **Time (mins)** | **Temp** **( º F)** |
| 0 | 179.5 |
| 5 | 168.7 |
| 8 | 158.1 |
| 11 | 149.2 |
| 15 | 141.7 |
| 18 | 134.6 |
| 22 | 125.4 |
| 25 | 123.5 |
| 30 | 116.3 |
| 34 | 113.2 |
| 38 | 109.1 |
| 42 | 105.7 |
| 45 | 102.2 |
| 50 | 100.5 |

1. The data at the right shows the cooling temperatures of a freshly brewed cup of coffee after it is poured from the brewing pot into a serving cup.  The brewing pot temperature is approximately 180º F.
	1. Determine the regression model to represent this data.
	2. Is this data a good fit to represent this data? Why?
	3. Based upon the new equation, what was the initial temperature of the coffee?
	4. When is the coffee at a temperature of 106 degrees?
	5. What is the predicted temperature of the coffee after 1 hour?

**2-8: Graph a scatter plot for each set of data and state the model which appears to be the best-fitting model. Find the regression equation for the model as well as the correlation coefficient.****R =** \_\_\_\_\_\_\_\_\_\_\_\_\_\_**R2 =** \_\_\_\_\_\_\_\_\_\_\_\_\_\_

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| --- | --- | --- | --- | --- | --- |
| x | 12 | 16 | 20 | 24 | 28 |
| y | 0.8 | 3.6 | 16.2 | 72.9 | 328.05 |

**2.**  **Best model/function: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_****Regression equation: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_****R =** \_\_\_\_\_\_\_\_\_\_\_\_\_\_**R2 =** \_\_\_\_\_\_\_\_\_\_\_\_\_\_

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| x | 2 | 7 | 12 | 17 | 22 |
| y | -100 | -55 | 40 | 185 | 380 |

**3.** **Best model/function: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_****Regression equation: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

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| --- | --- | --- | --- | --- | --- |
| x | 2.2 | 2.6 | 3.0 | 3.4 | 3.8 |
| y | 0.68 | 4.52 | 9.0 | 14.12 | 19.88 |

**4.** **R =** \_\_\_\_\_\_\_\_\_\_\_\_\_\_**R2 =** \_\_\_\_\_\_\_\_\_\_\_\_\_\_ **Best model/function: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_****Regression equation: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

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| x | 0.3 | 0.7 | 1.1 | 1.5 | 1.9 |
| y | 2.5 | 3 | 3.6 | 4.32 | 5.184 |

**5.** **R =** \_\_\_\_\_\_\_\_\_\_\_\_\_\_**R2 =** \_\_\_\_\_\_\_\_\_\_\_\_\_\_ **Best model/function: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_****Regression equation: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_****R =** \_\_\_\_\_\_\_\_\_\_\_\_\_\_**R2 =** \_\_\_\_\_\_\_\_\_\_\_\_\_\_

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| --- | --- | --- | --- | --- | --- |
| x | 0.06 | 0.375 | 0.96 | 1.815 | 2.94 |
| y | 0.2 | 0.5 | 0.8 | 1.1 | 1.4 |

**6.** **Best model/function: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_****Regression equation: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_****R =** \_\_\_\_\_\_\_\_\_\_\_\_\_\_**R2 =** \_\_\_\_\_\_\_\_\_\_\_\_\_\_

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| x | -6 | 1 | 8 | 15 | 22 |
| y | 15 | 1 | 30.12 | 102.36 | 217.72 |

**7.**  **Best model/function: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_****Regression equation: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_****R =** \_\_\_\_\_\_\_\_\_\_\_\_\_\_**R2 =** \_\_\_\_\_\_\_\_\_\_\_\_\_\_

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| x | 0.32 | 2.07 | 4.8 | 8.51 | 13.2 |
| y | 0.9 | 1.6 | 2.3 | 3.0 | 3.7 |

**8.** **Best model/function: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_****Regression equation: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** |
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