

## Linear Increasing Model

Model Type	Linear Increasing
Formula	$y = mx+b$
Slope (m)	0.34
Intercept (b)	50
Beginning x	-100
Increment x	2

Describe Trend Model

**Trend Lines Model**

A linear trend model is computed for sum of Y-Value given sum of X-Value. The model may be significant at  $p \leq 0.05$ .

**Model formula:** (X-Value + intercept)

**Number of modeled observations:** 101

**Number of filtered observations:** 0

**Model degrees of freedom:** 2

**Residual degrees of freedom (DF):** 99

**SSE (sum squared error):** 1.068e-026

**MSE (mean squared error):** 1.079e-028

**R-Squared:** 1

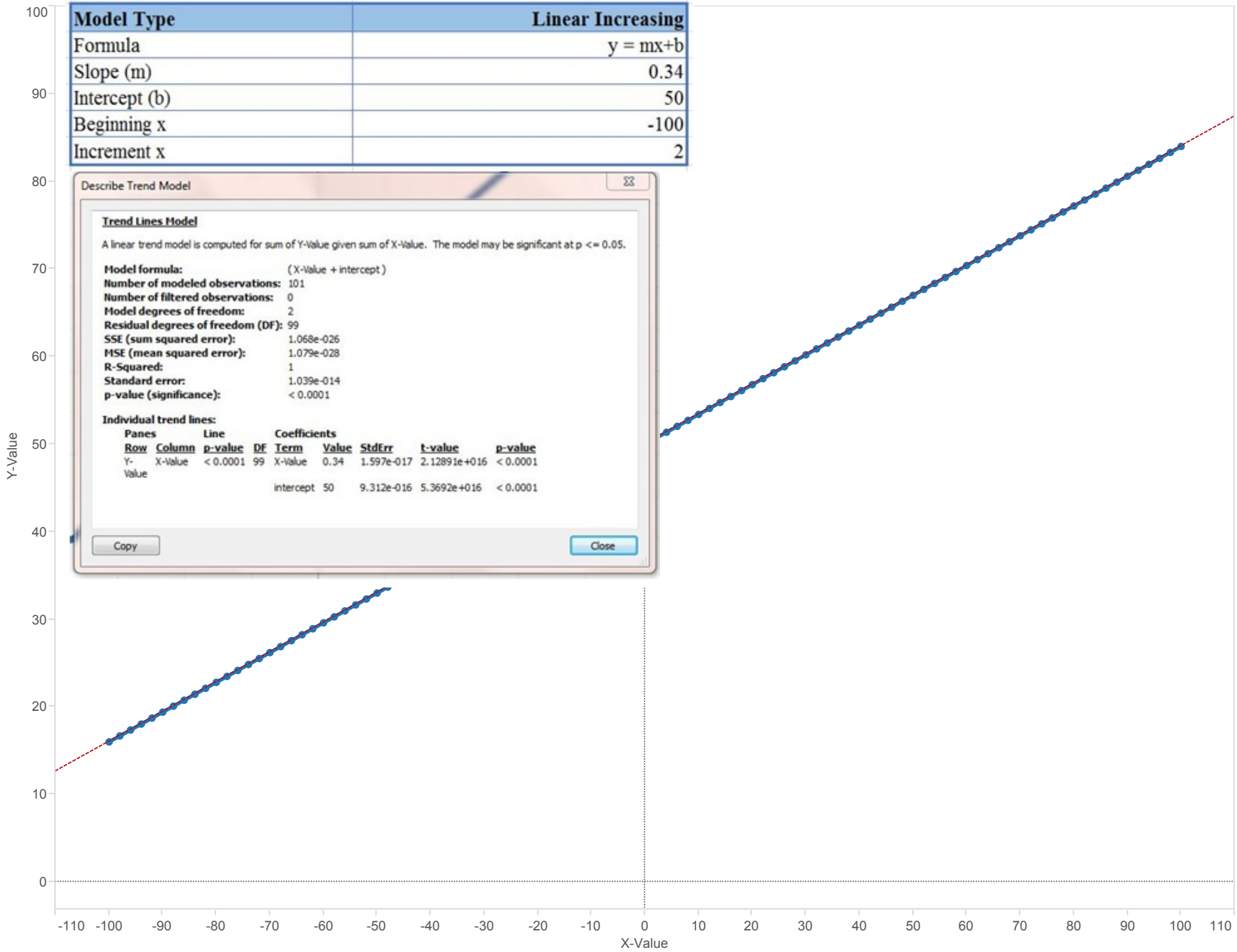
**Standard error:** 1.039e-014

**p-value (significance):** < 0.0001

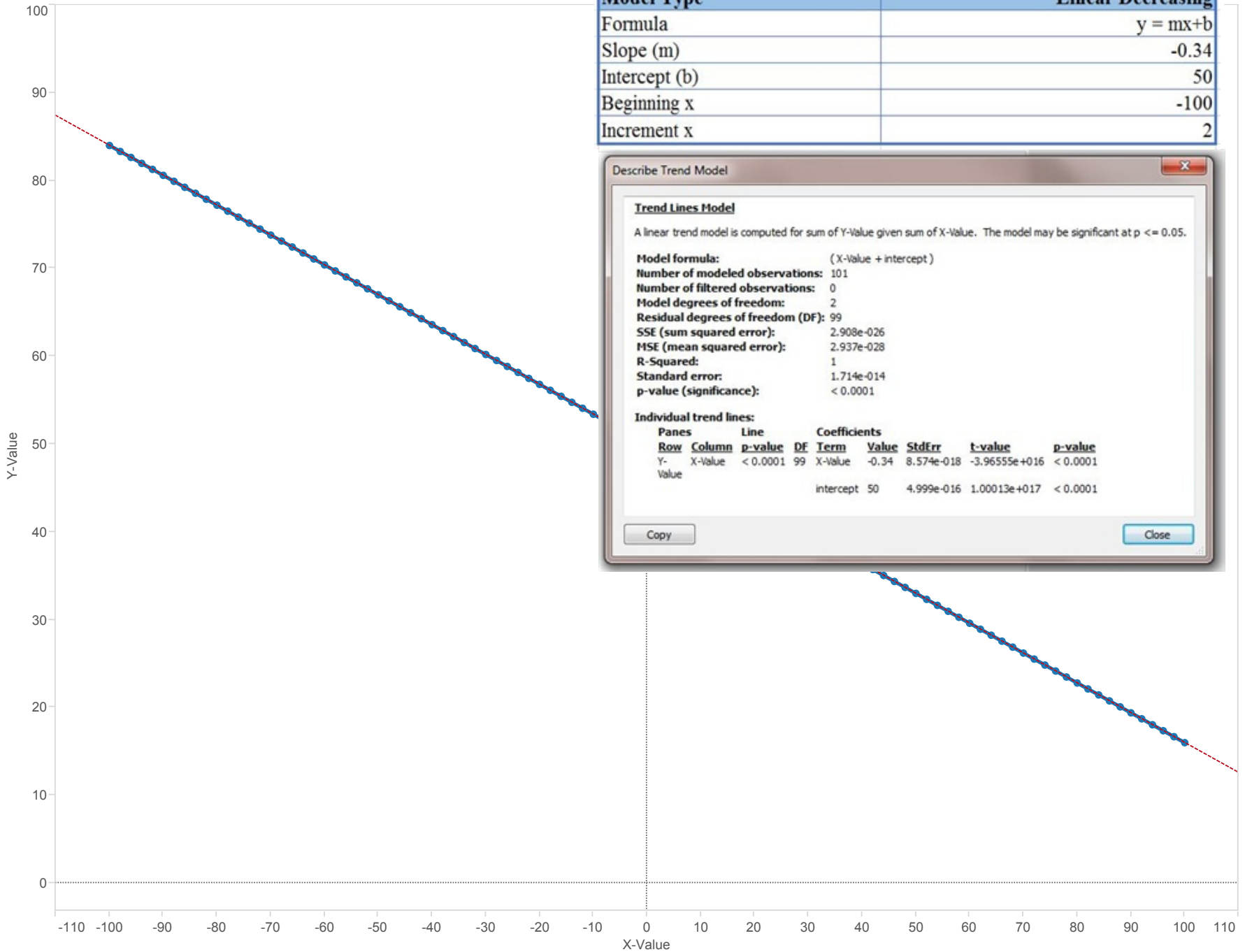
**Individual trend lines:**

Panels		Line		Coefficients				
Row	Column	p-value	DF	Term	Value	StdErr	t-value	p-value
Y-	X-Value	< 0.0001	99	X-Value	0.34	1.597e-017	2.12891e+016	< 0.0001
Value				intercept	50	9.312e-016	5.3692e+016	< 0.0001

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## Linear Decreasing Model



Model Type	Linear Decreasing
Formula	$y = mx+b$
Slope (m)	-0.34
Intercept (b)	50
Beginning x	-100
Increment x	2

**Describe Trend Model**

Trend Lines Model

A linear trend model is computed for sum of Y-Value given sum of X-Value. The model may be significant at  $p \leq 0.05$ .

**Model formula:** (X-Value + intercept)

**Number of modeled observations:** 101

**Number of filtered observations:** 0

**Model degrees of freedom:** 2

**Residual degrees of freedom (DF):** 99

**SSE (sum squared error):** 2.908e-026

**MSE (mean squared error):** 2.937e-028

**R-Squared:** 1

**Standard error:** 1.714e-014

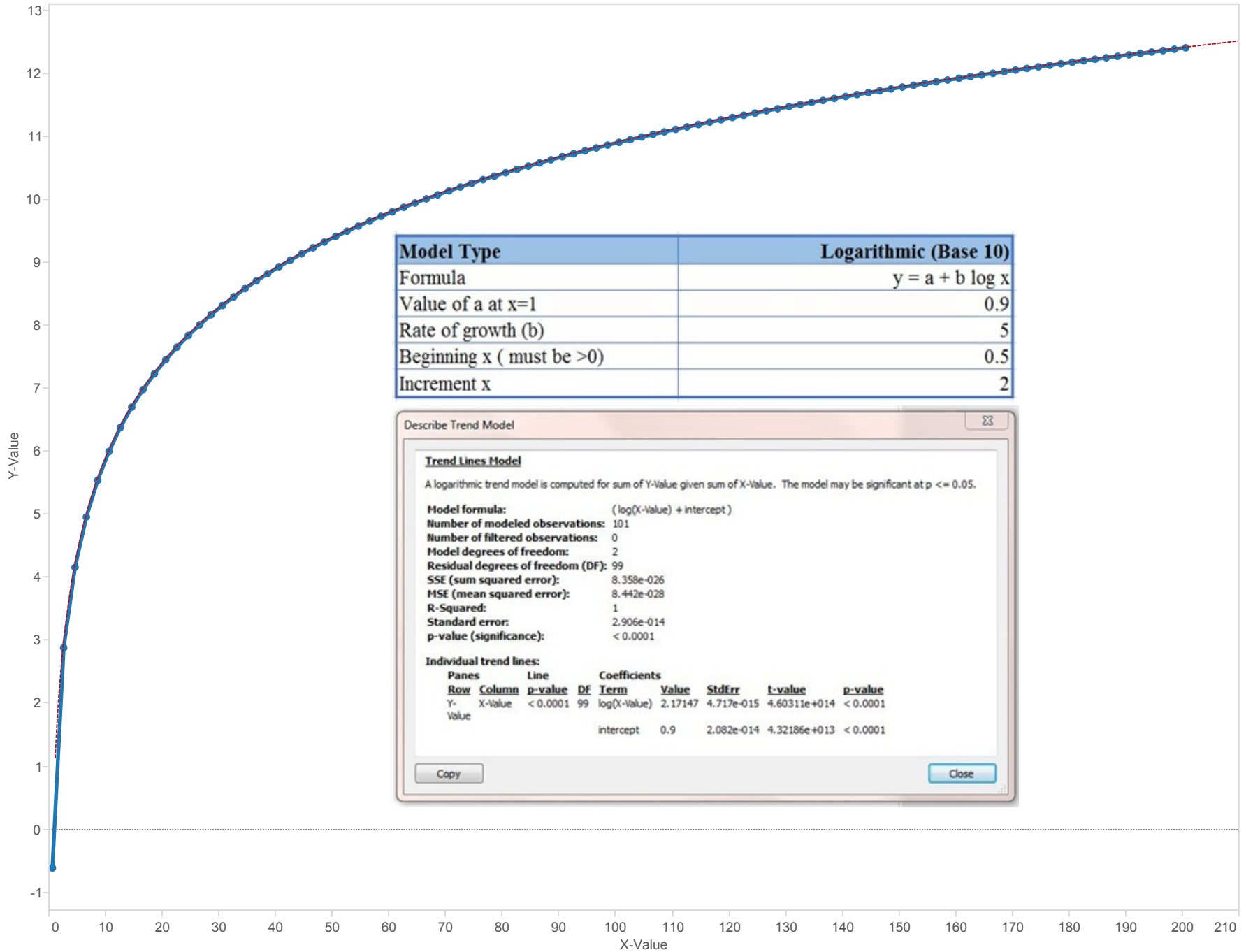
**p-value (significance):** < 0.0001

**Individual trend lines:**

Row	Column	p-value	DF	Term	Value	StdErr	t-value	p-value
Y-Value	X-Value	< 0.0001	99	X-Value	-0.34	8.574e-018	-3.96555e+016	< 0.0001
	intercept			intercept	50	4.999e-016	1.00013e+017	< 0.0001

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## Log Base 10 Model



Model Type	Logarithmic (Base 10)
Formula	$y = a + b \log x$
Value of a at x=1	0.9
Rate of growth (b)	5
Beginning x ( must be >0)	0.5
Increment x	2

Describe Trend Model Σ

**Trend Lines Model**

A logarithmic trend model is computed for sum of Y-Value given sum of X-Value. The model may be significant at  $p \leq 0.05$ .

**Model formula:** (log(X-Value) + intercept )

**Number of modeled observations:** 101

**Number of filtered observations:** 0

**Model degrees of freedom:** 2

**Residual degrees of freedom (DF):** 99

**SSE (sum squared error):** 8.358e-026

**MSE (mean squared error):** 8.442e-028

**R-Squared:** 1

**Standard error:** 2.906e-014

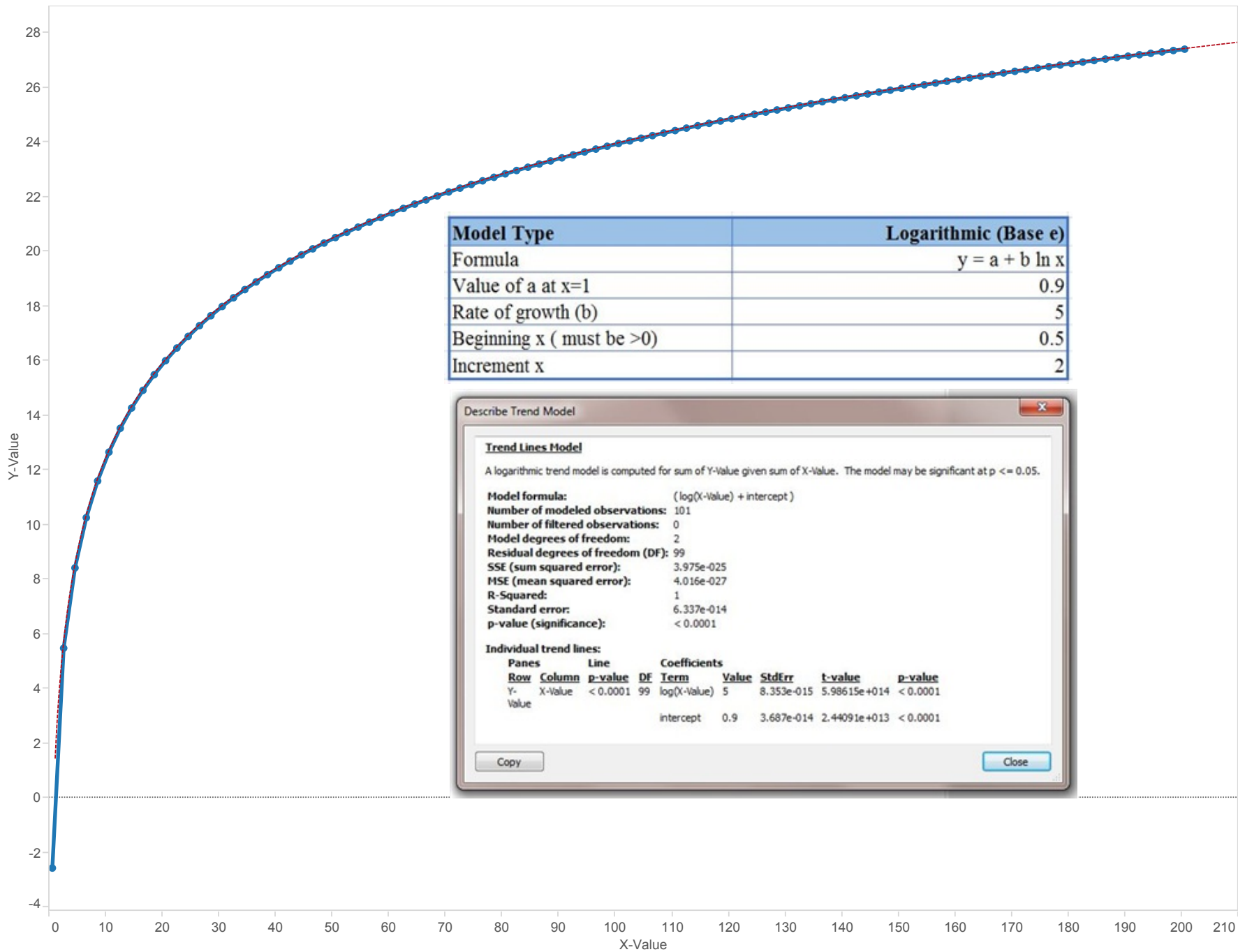
**p-value (significance):** < 0.0001

**Individual trend lines:**

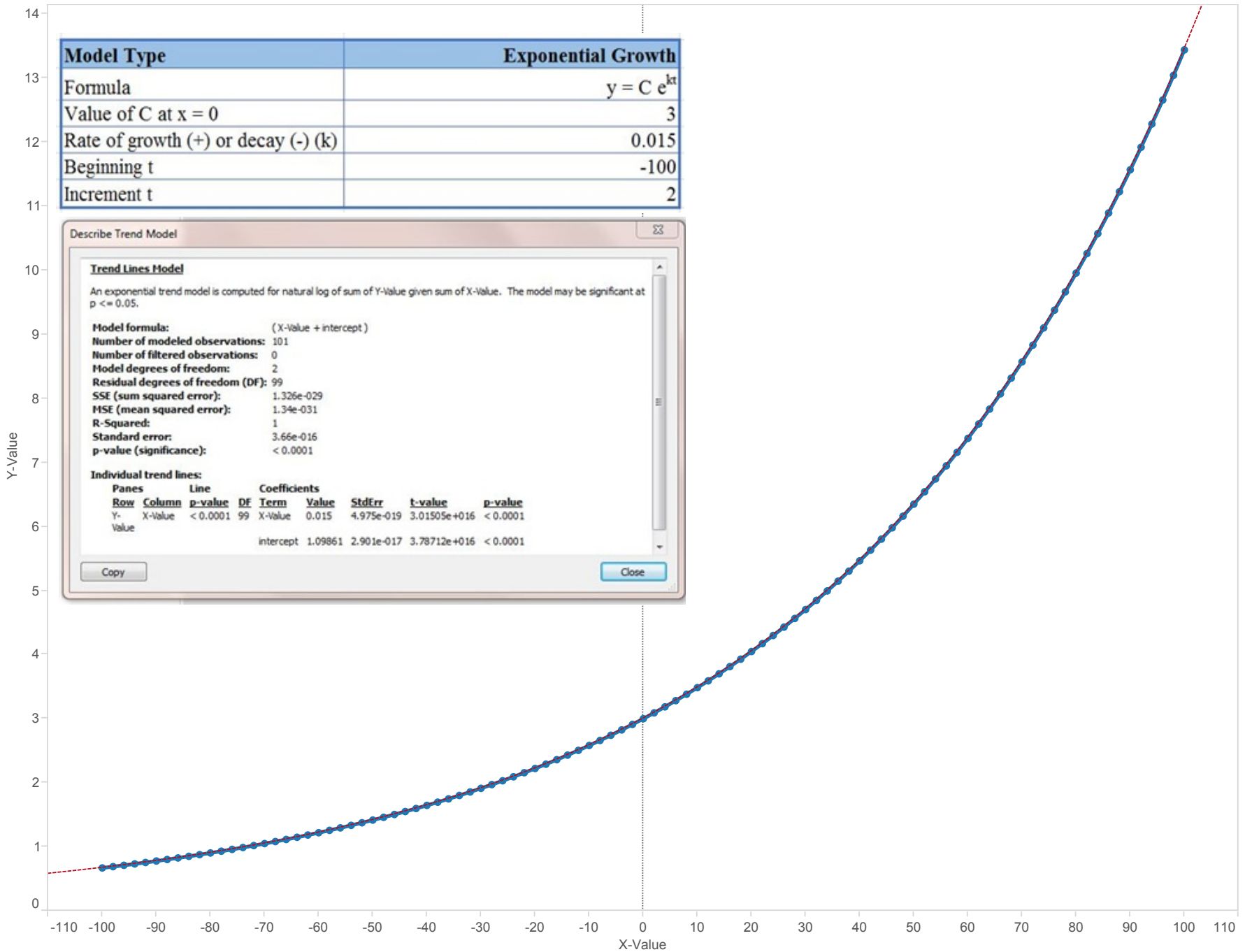
Panes	Line	Coefficients						
Row	Column	p-value	DF	Term	Value	StdErr	t-value	p-value
Y-Value	X-Value	< 0.0001	99	log(X-Value)	2.17147	4.717e-015	4.60311e+014	< 0.0001
				intercept	0.9	2.082e-014	4.32186e+013	< 0.0001

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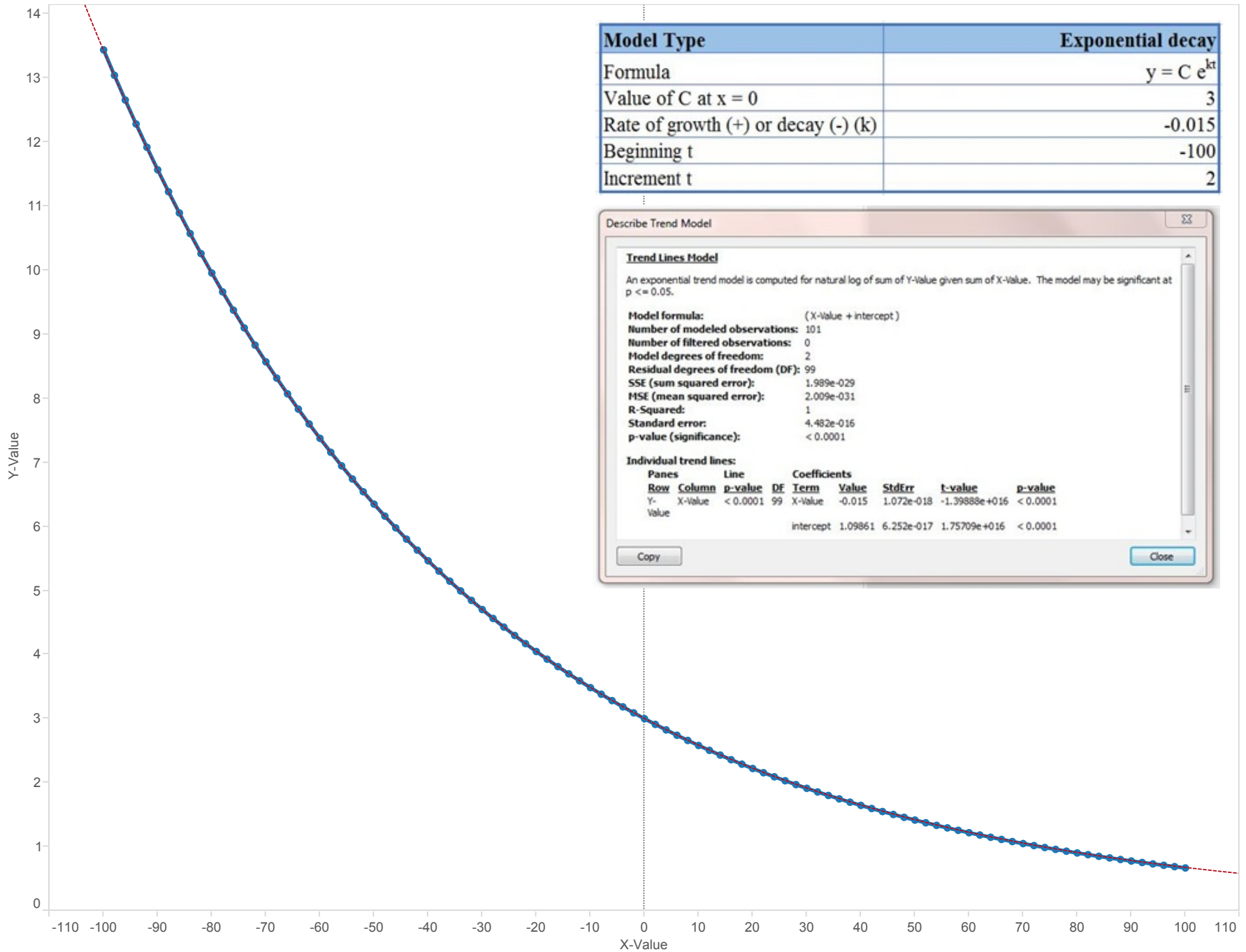
## Log Base e Model



## Exponential Growth Model Base e



## Exponential Decay Model Base e



## Exponential Growth Model Base 10

Model Type	Exponential Growth Base 10
Formula	$y = C 10^{kt}$
Value of C at x = 0	3
Rate of growth (+) or decay (-) (k)	0.015
Beginning t	-100
Increment t	2

**Describe Trend Model**

**Trend Lines Model**

An exponential trend model is computed for natural log of sum of Y-value given sum of X-value. The model may be significant at  $p \leq 0.05$ .

**Model formula:** (X-Value + intercept)

**Number of modeled observations:** 101

**Number of filtered observations:** 0

**Model degrees of freedom:** 2

**Residual degrees of freedom (DF):** 99

**SSE (sum squared error):** 7.312e-030

**MSE (mean squared error):** 7.386e-032

**R-Squared:** 1

**Standard error:** 2.718e-016

**p-value (significance):** < 0.0001

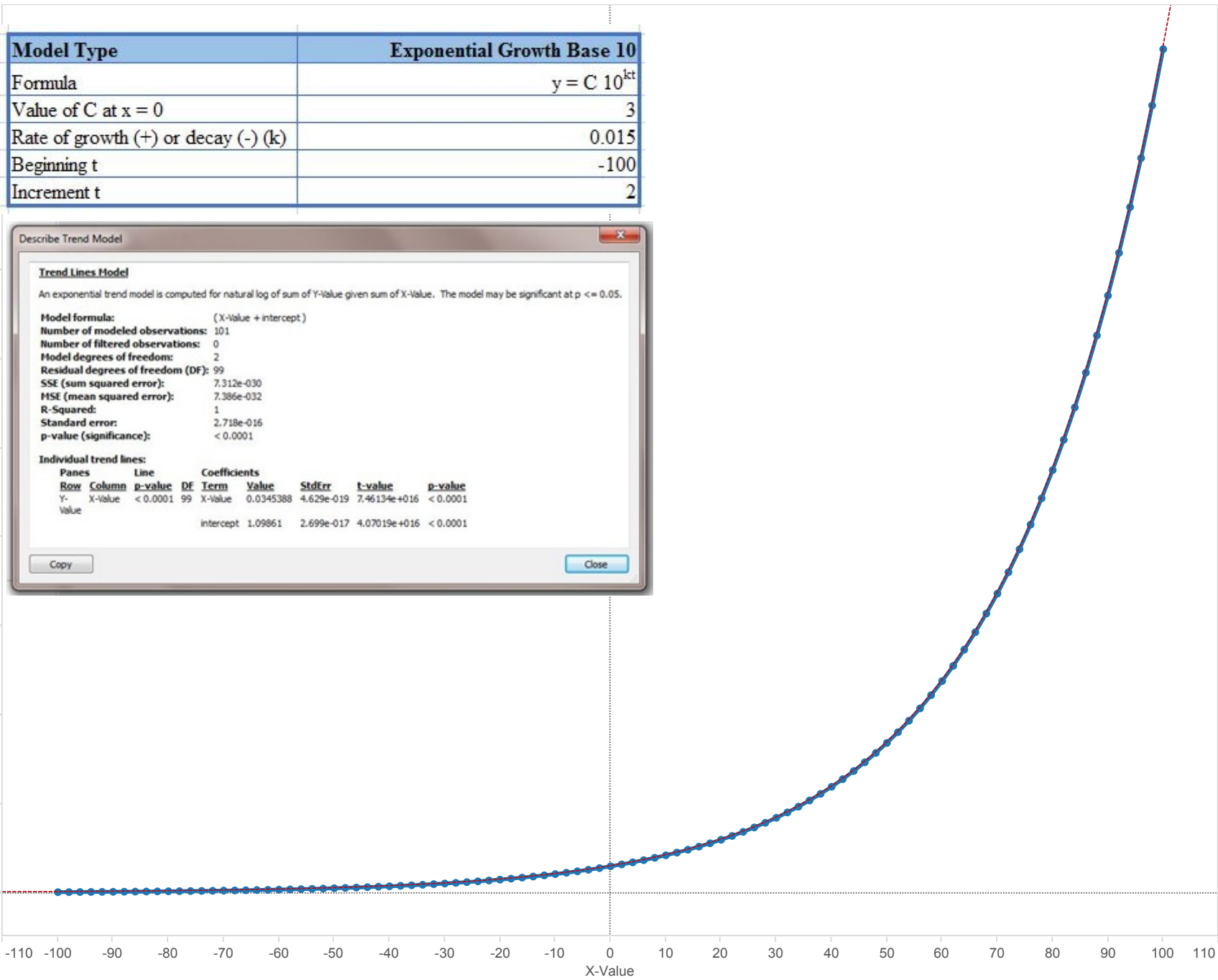
**Individual trend lines:**

Row	Column	Line	Coef	Value	StdErr	t-value	p-value	
Y-	X-Value	< 0.0001	99	X-Value	0.0345388	4.629e-019	7.46134e+016	< 0.0001
Value				intercept	1.09861	2.699e-017	4.07019e+016	< 0.0001

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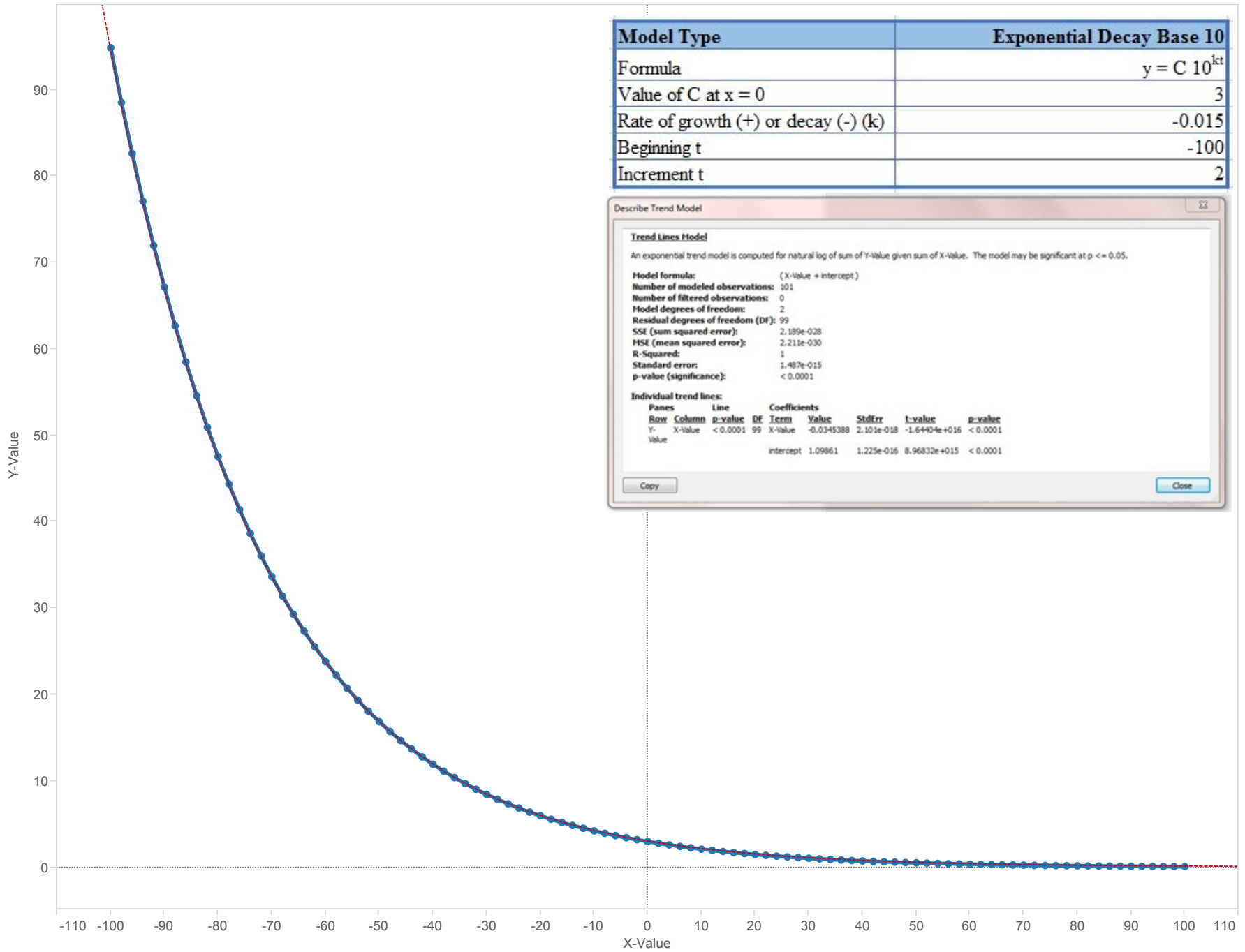
Y-Value

X-Value



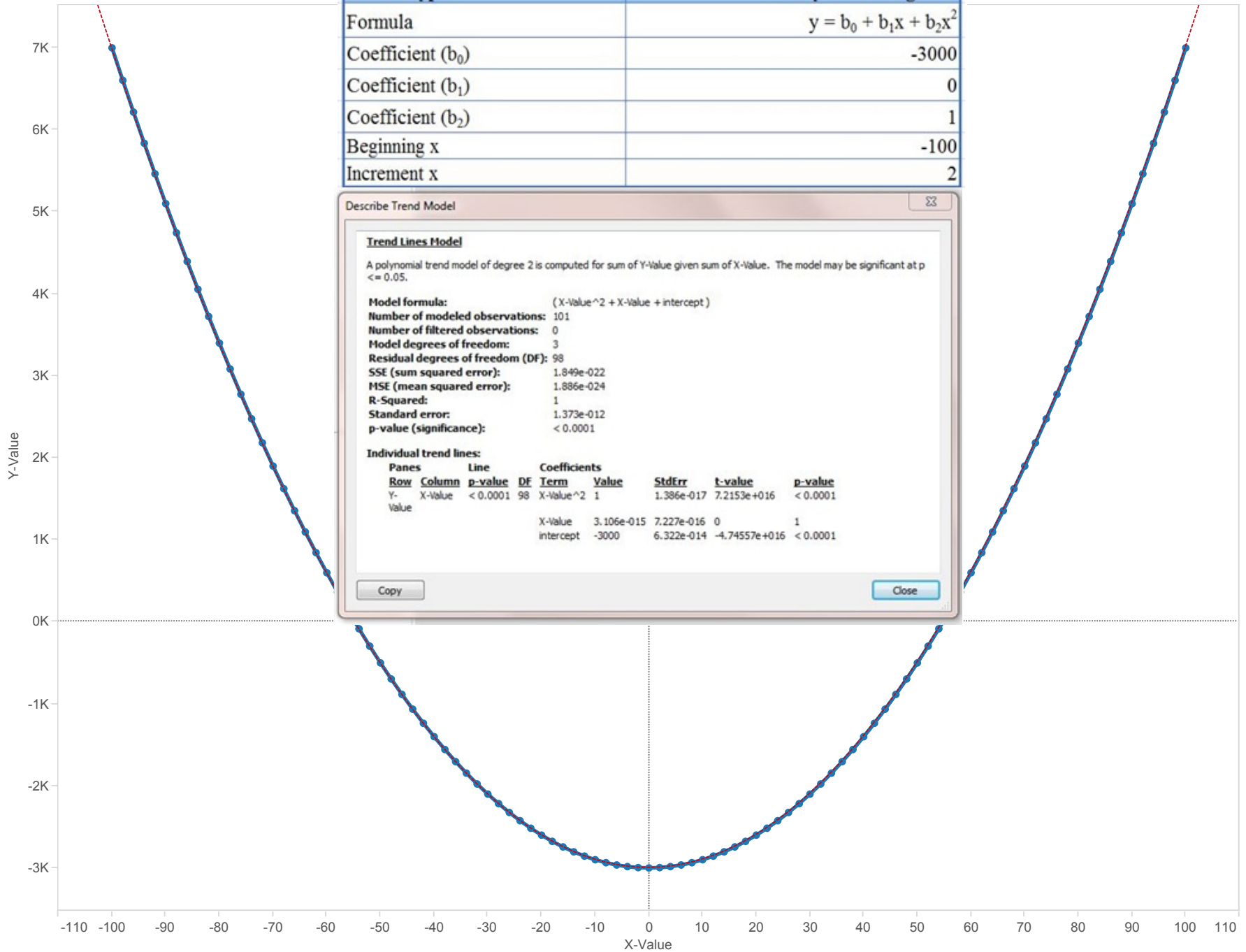


## Exponential Decay Model Base 10

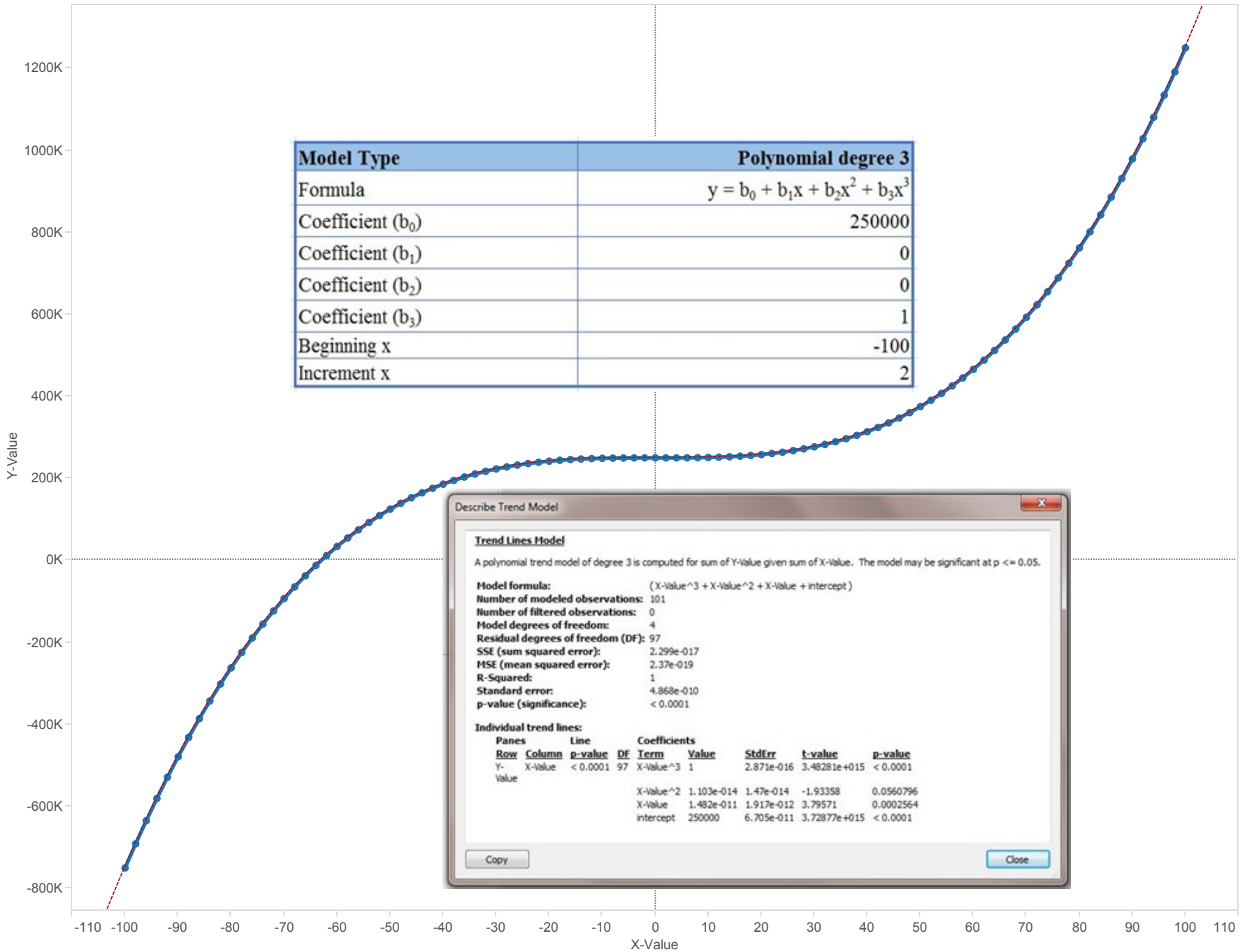




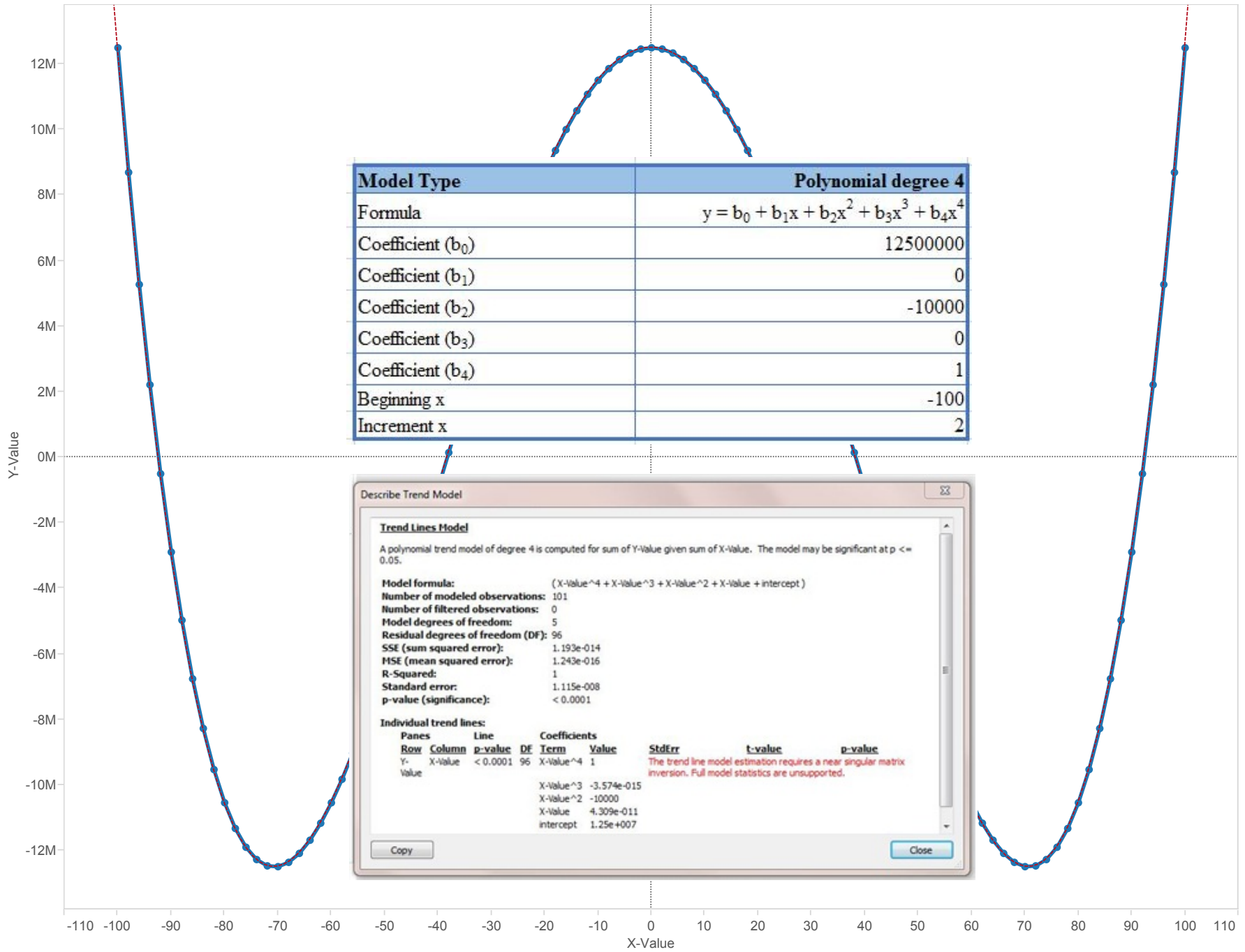
## Polynomial Degree 2 Model



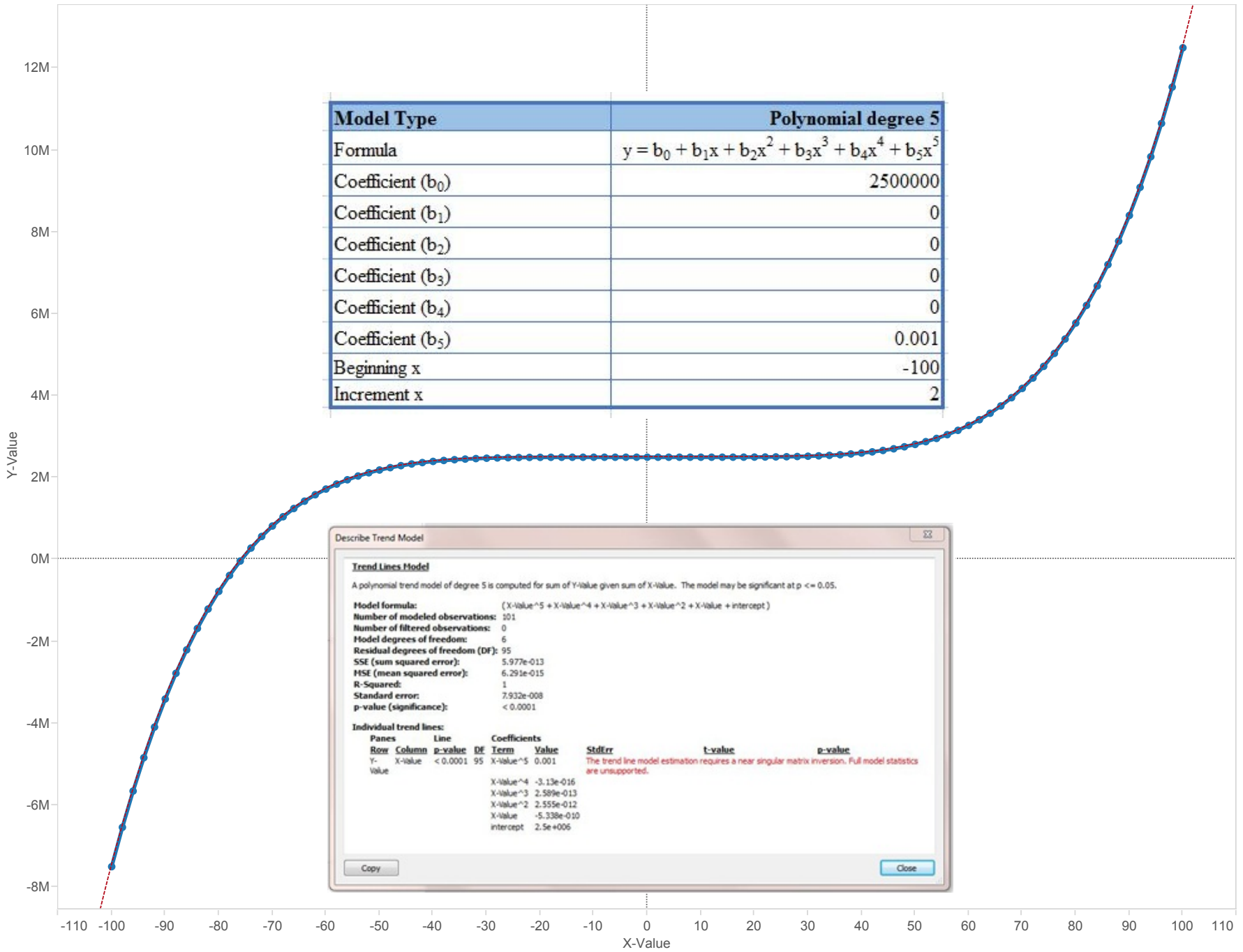
## Polynomial Degree 3 Model



## Polynomial Degree 4 Model



# Polynomial Degree 5 Model



Model Type	Polynomial degree 5
Formula	$y = b_0 + b_1x + b_2x^2 + b_3x^3 + b_4x^4 + b_5x^5$
Coefficient (b <sub>0</sub> )	2500000
Coefficient (b <sub>1</sub> )	0
Coefficient (b <sub>2</sub> )	0
Coefficient (b <sub>3</sub> )	0
Coefficient (b <sub>4</sub> )	0
Coefficient (b <sub>5</sub> )	0.001
Beginning x	-100
Increment x	2

**Describe Trend Model**

**Trend Lines Model**

A polynomial trend model of degree 5 is computed for sum of Y-value given sum of X-value. The model may be significant at  $p <= 0.05$ .

**Model formula:**  $(X\text{-value}^5 + X\text{-value}^4 + X\text{-value}^3 + X\text{-value}^2 + X\text{-value} + \text{intercept})$

**Number of modeled observations:** 101

**Number of filtered observations:** 0

**Model degrees of freedom:** 6

**Residual degrees of freedom (DF):** 95

**SSE (sum squared error):** 5.977e-013

**MSE (mean squared error):** 6.291e-015

**R-Squared:** 1

**Standard error:** 7.932e-008

**p-value (significance):** < 0.0001

**Individual trend lines:**

Panes	Line	Coefficients	StdErr	t-value	p-value				
Row	Column	p-value	DF	Term	Value				
Y-	X-value	< 0.0001	95	X-value^5	0.001				
				X-value^4	-3.13e-016				
				X-value^3	2.589e-013				
				X-value^2	2.555e-012				
				X-value	-5.338e-010				
				intercept	2.5e+006				

The trend line model estimation requires a near singular matrix inversion. Full model statistics are unsupported.

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