

The daily number of deaths in NY State from COVID-19 are fit to by two exponential functions (i.e. geometric sequences). Growth rate was 20.0% per day, or doubling each 3.8 days. Recently the rate of decline has been 4.27% per day.

horizontal scale: Days since 15 March

vertical: Deaths reported each day in NY State (source CovidTrack.com)

$$y_1 \sim 17 \cdot (1+r)^{x_1} \{8 \leq x_1 \leq 20\}$$

☐ Log Mode

STATISTICS
 $R^2 = 0.9857$

PARAMETERS
 $r = 0.19975$

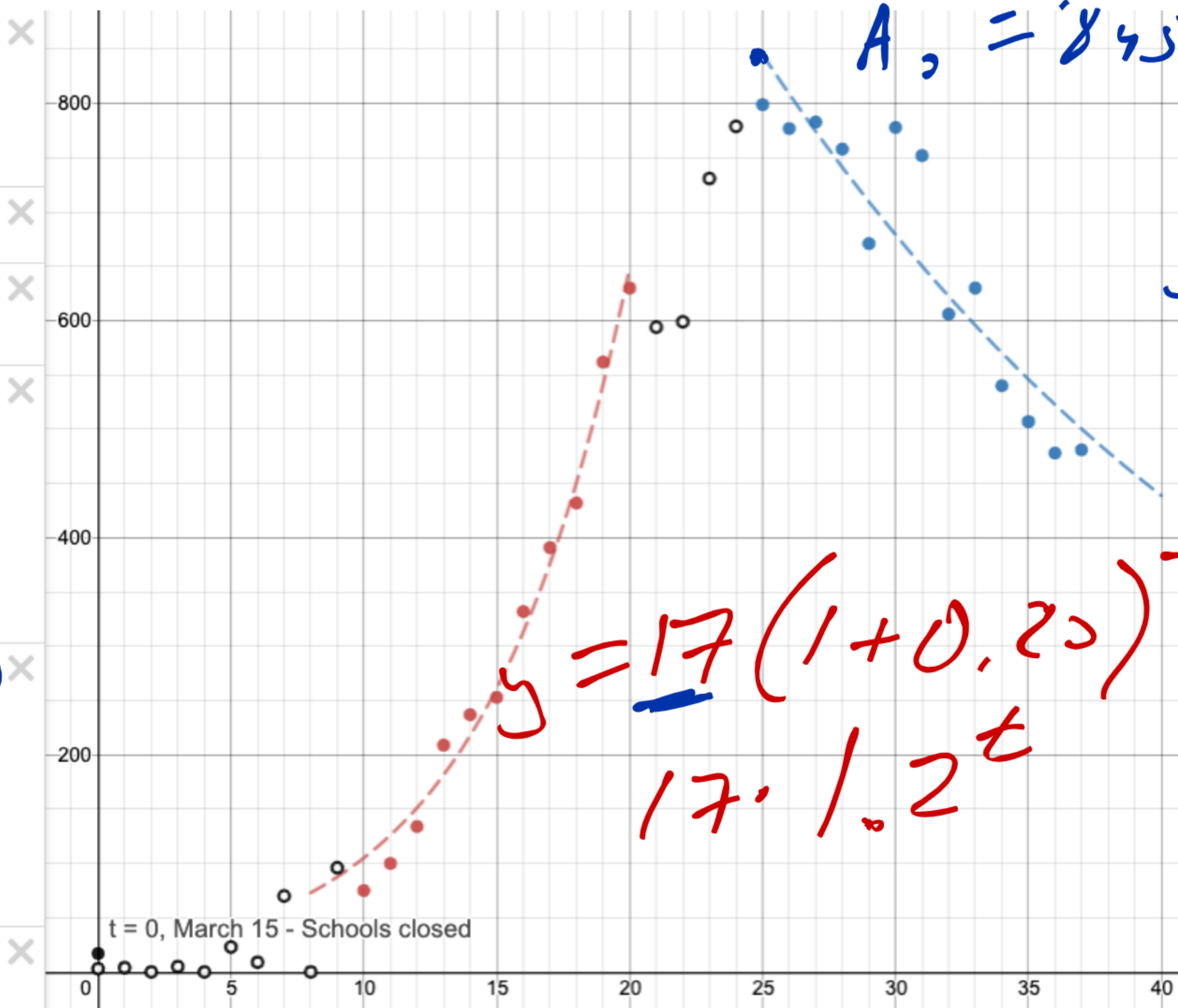
$$y_4 \sim 845 \cdot (1-r)^{(x_4-25)} \{25 \leq x_4 \leq 40\}$$

☐ Log Mode

STATISTICS
 $R^2 = 0.8324$

PARAMETERS
 $r = 0.0427433$

The data marked as black circles were not used in the regressions.



$$g(x) = 845(1-0.04)^t = 845(0.96)^t$$

$$b < 1$$

"R" R number

$$f(x) = A_0 (b^x)$$

initial value

$$b > 1 \text{ growth}$$

$$R^2, R, C_0$$

The graph plots fatalities (y-axis) versus time (x-axis, in days)
The data have been divided by color among 4 phases:
first, noisy
two: red exponential increase
third: black circles (started to flatten)
fourth: blue, decreasing exponentially