

1.1 Modeling & Equation Solving

Target 1B: Connecting Numeric, Algebraic, and Graphical Models

Review of Prior Concepts

Which of the following equations represents the linear relationship between time, t , and velocity, v , shown in the table below?

t	0	1	2
v	120	152	184

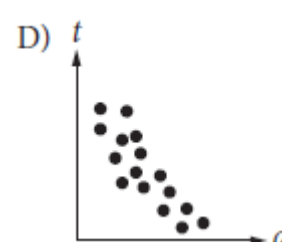
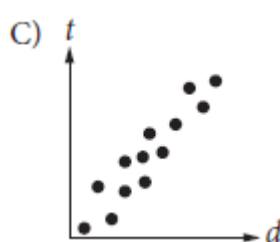
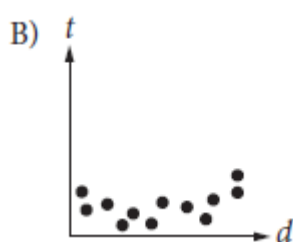
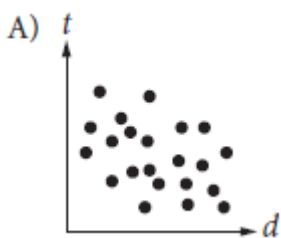
- A. $v = 32t$ B. $v = 32t + 120$ C. $v = 120t$ D. $v = 120t + 32$ E. $v = 120t + 120$

SAT Connection**Problem Solving and Data Analysis**

4. Given a scatterplot, use linear, quadratic, or exponential models to describe how the variables are related.

Example:

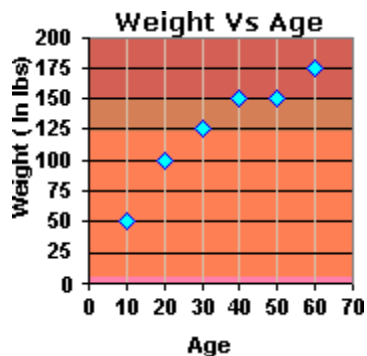
Which of the following graphs best shows a strong negative association between d and t ?



Solution

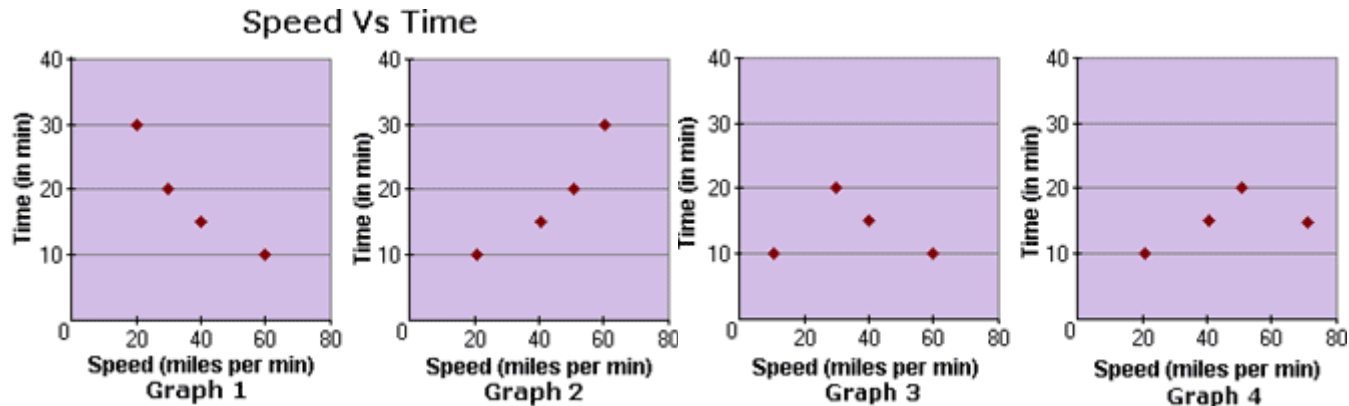
Graphical Models and Trends

Example 1: What sort of trend is shown in the scatter plot?



- A. No trend B. Negative trend C. Constant trend D. Positive trend

Example 2: Which scatter plot shows the negative relationship between the times taken to reach City A from City B at different speeds?



- A. Graph 3 B. Graph 1 C. Graph 4 D. Graph 2

More Practice

Interpreting Data

<https://www.ixl.com/math/algebra-1/interpret-a-scatter-plot>

<https://www.youtube.com/watch?v=CWnfwZRAuaY>

Homework Assignment

p.76 #1,3,5,6,21,24-27all,57-60all

SAT Connection**Solution**

Choice D is correct. A graph with a strong negative association between d and t would have the points on the graph closely aligned with a line that has a negative slope. The more closely the points on a graph are aligned with a line, the stronger the association between d and t , and a negative slope indicates a negative association. Of the four graphs, the points on graph D are most closely aligned with a line with a negative slope. Therefore, the graph in choice D has the strongest negative association between d and t .

Choice A is incorrect because the points are more scattered than the points in choice D, indicating a weak negative association between d and t . Choice B is incorrect because the points are aligned to either a curve or possibly a line with a small positive slope. Choice C is incorrect because the points are aligned to a line with a positive slope, indicating a positive association between d and t .