

MATH SKILL INFORMATION PAGE

Pre-Algebra

For use with 8-6

Trend Line Equation

Steps to Making a Trend Line Equation


1. Plot the points.

For this example, we're using these points:

(1,3), (2,4), (3,3), (4,5), (6,4), (7,6), (7,8), (10,8).

2. Determine correlation. In this case, positive.

3. Pick end points. Key idea: be reasonable. Pick the points so that the line between them will be reasonably close to as many points as possible.

In this example,  designates the endpoints.

4. Draw a line using the endpoints.

5. Use the endpoints to determine slope.

The end points are (1,3) and (10,8), so:

$$\frac{3-8}{1-10} = \frac{5}{9} \quad \text{or} \quad \frac{8-3}{10-1} = \frac{-5}{-9} = \frac{5}{9}$$

6. Find the y-intercept by using the slope and a point—choose one of the two end points, such as (1,3)—and putting them into slope-intercept form ($y = mx + b$).

$$y = \frac{5}{9}x + b \Rightarrow 3 = \frac{5}{9}(1) + b \Rightarrow 3 = \frac{5}{9} + b \Rightarrow 3 - \frac{5}{9} = b = \frac{27}{9} - \frac{5}{9} = \frac{22}{9}$$

7. Put together into the final equation (slope-intercept form):

$$y = \frac{5}{9}x + \frac{22}{9}$$

