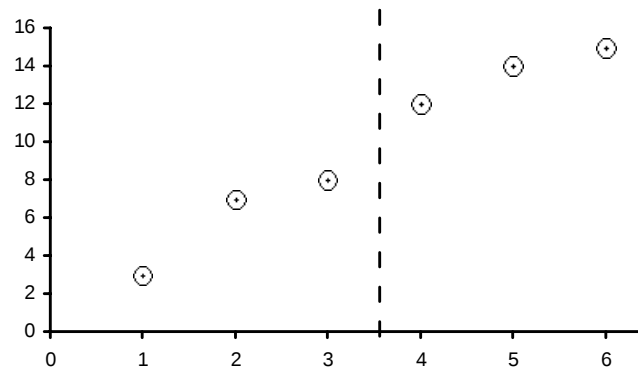
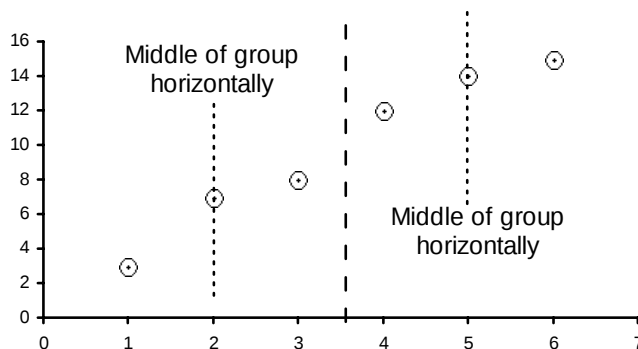


Visually Finding a Line of Best Fit

- Draw a vertical line that splits the points up into two equal sized groups. If there are an odd number of points (for instance 5), just split the groups slightly unevenly (3 in one, 2 in the other).

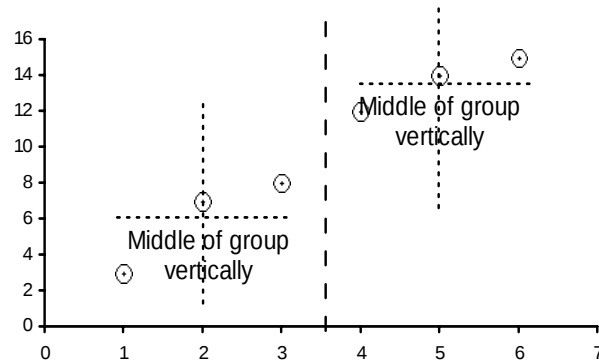


- Find the middle of each group in the horizontal direction.

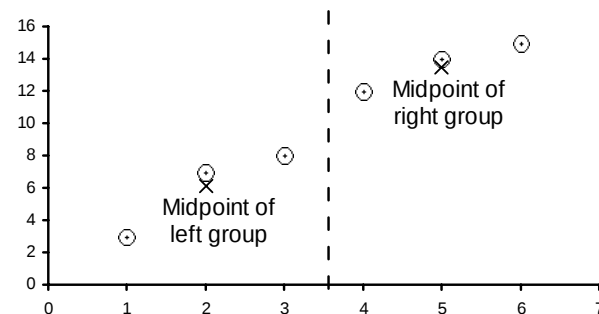


- Find the middle of each group in the vertical direction.

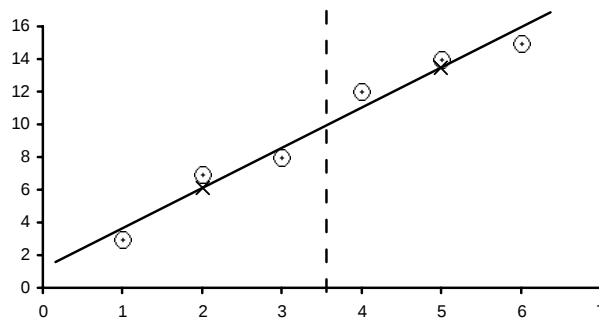
Lines of Best Fit



- Draw a cross or marker at the midpoint of each of the two groups. The midpoint is the location found in steps 2 and 3.

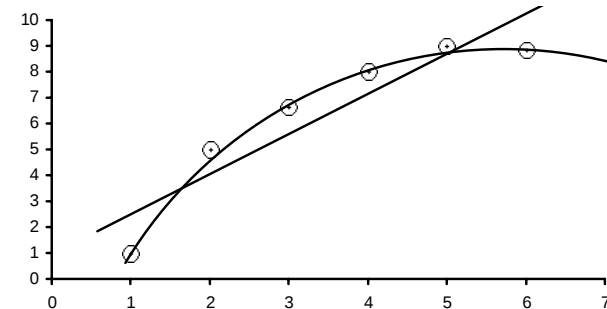


- Draw a line between these two midpoints.



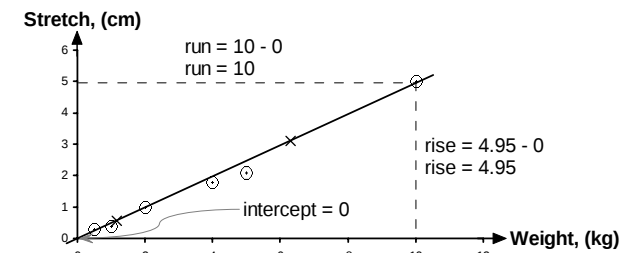
Curved Lines

Sometimes you're better off using a *curved* line to represent the data. For this data:



Notice how the curved line seems to fit the data points a lot better than the straight line.

Getting a Line Equation



Normally straight line is $y = mx + c$. But instead of 'x' we have the weight, 'w'. Instead of 'y' we have the stretch length, we'll call 's':

$$s = mw + c$$

The intercept, 'c', is going to equal '0'

$$m = \frac{\text{rise}}{\text{run}}$$

$$m = \frac{4.95}{10}$$

$$m = 0.495 \frac{\text{cm}}{\text{kg}}$$

So:

$$s = 0.495w + 0$$

$$s = 0.495w$$