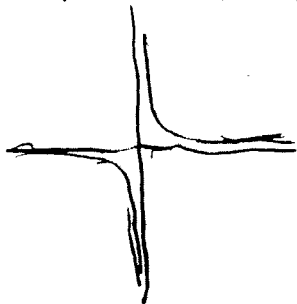2. What is inverse variation? Explain in detail including equations, graphs, and appropriate vocabulary. Include a specific example.

If variables x and y are related by an equation in the form $y = \frac{k}{x}$ or $yx = k$ then y is said to vary inversely with x. The symbolic form $xy = k$ shows that the product of y and x is constant for any corresponding values of x and y. A graph for an inverse variation would be an hyperbola. In a table of values the product of variables is constant (at x, y is not defined) When explaining an inverse variation you can also say that y varies inversely with x and constant of proportionality k instead of y is inversely proportion to x with constant of proportionality k.

ex: $S = \frac{500}{t}$ or $(s)(t) = 500$

X	Y
0	Error
1	500
2	250
3	166.6̄

- 1 x 500 = 500
- 2 x 250 = 500
- 3 x 166.6 = 500

at x = y is no defined because y can't div by 0

The average speed varies inversely with the time it takes to complete the race with constant of proportionality 500.