

Inverse Variation Notes

Inverse Variation

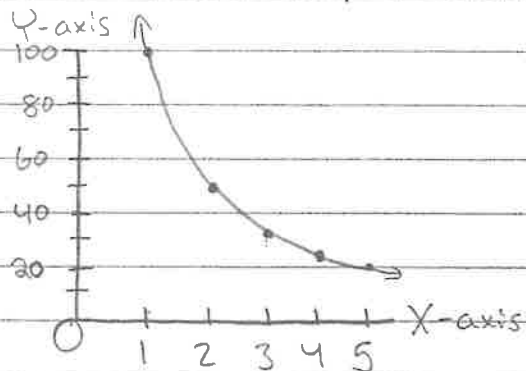
a relationship between two variables, typically X and Y , in which the product is a constant K

$$Y = \frac{K}{X} \quad X \cdot Y = K$$

$$20 = \frac{100}{5} \quad 5 \cdot 20 = 100$$

X	1	2	3	4	5
Y	100	50	33.3	25	20
K	100	100	100	100	100

As X increases, Y decreases



Curved line = inverse graph
as $X \uparrow$ $Y \downarrow$

- ① Write out formula $X \cdot Y = K$
- ② Fill in what you know $X =$ $Y =$ $K =$
- ③ Solve for missing variables

Science Example

$$\text{Work} = \text{Force} \cdot \text{Distance}$$
$$W = F \cdot D$$

A force of 75 Newtons is exerted on a sofa, and the sofa is moved 5 meters. How much work was done?

A force of 75 N is exerted on a sofa, and the sofa is moved 5m. How much work is done on the sofa?

$$X \cdot Y = K$$

$$F \cdot D = W$$

$$75 \cdot 5 = 375$$