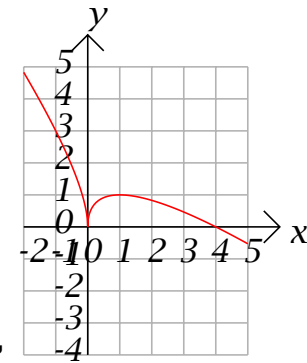


## Shifting & Scaling Exercises

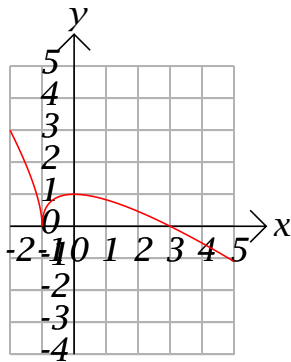


Part of the graph of  $y = f(x) = -x + 2\sqrt{|x|}$  is shown to the right. Parts of the graphs of

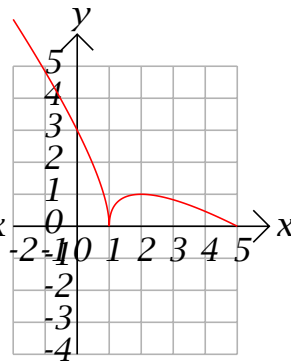
(1)  $y = f(2x)$ , (2)  $y = f(x + 1)$ , (3)  $y = f(x) + 1$ , (4)  $y = f(x) - 1$ , (5)  $y = f(x - 1)$ ,

(6)  $y = -f(x)$ , (7)  $y = 2f(x)$ , (8)  $y = \frac{1}{2}f(x)$ , (9)  $y = -f(x) + 1$ , (10)  $y = f(x/2)$ ,

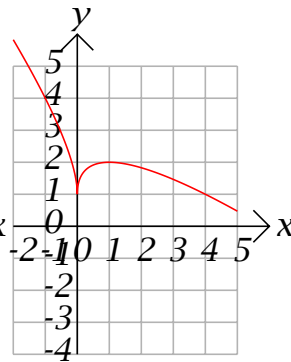
are shown below. Match them.



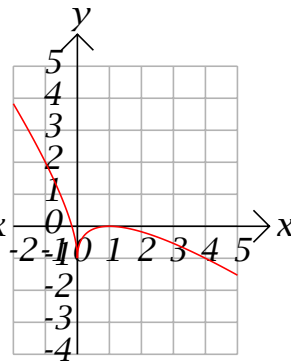
**A**



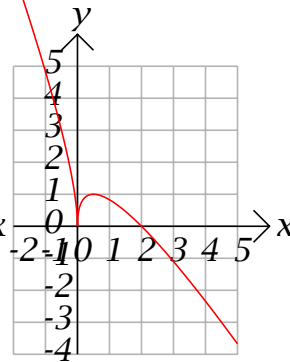
**B**



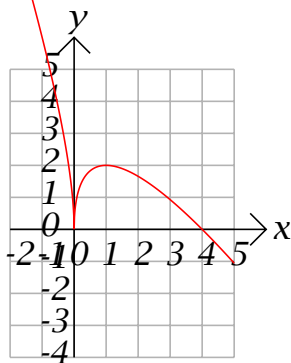
**C**



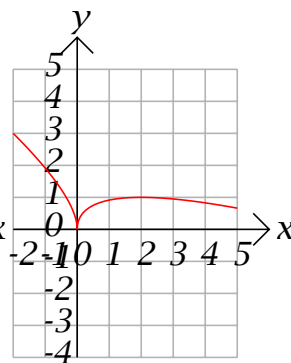
**D**



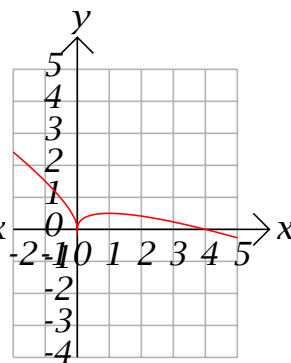
**E**



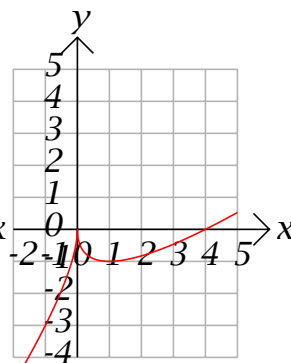
**F**



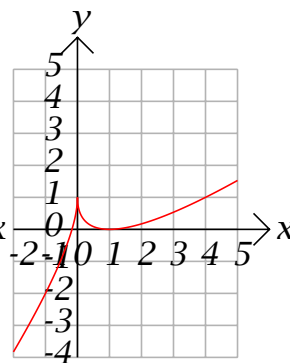
**G**



**H**

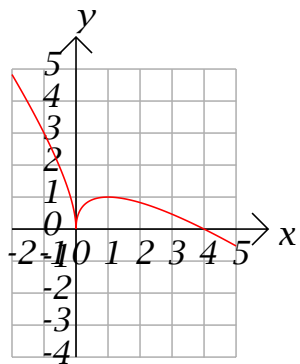


**I**



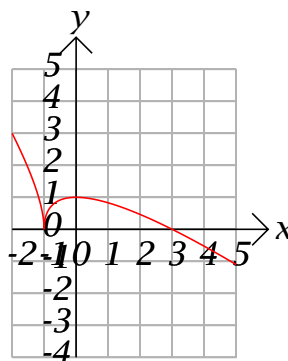
**J**

...Answers→

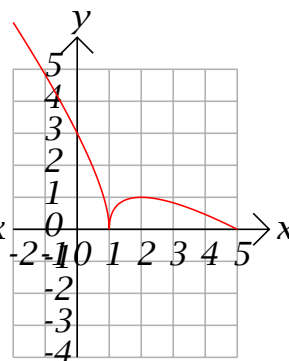


Answers:

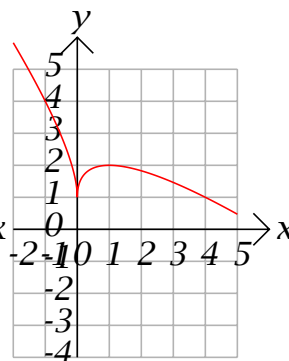
- (1) **(E)**  $y = f(2x)$ , (2) **(A)**  $y = f(x + 1)$ , (3) **(C)**  $y = f(x) + 1$ , (4) **(D)**  $y = f(x) - 1$ , (5) **(B)**  $y = f(x - 1)$ ,  
 (6) **(I)**  $y = -f(x)$ , (7) **(F)**  $y = 2f(x)$ , (8) **(H)**  $y = \frac{1}{2}f(x)$ , (9) **(J)**  $y = -f(x) + 1$ , (10) **(G)**  $y = f(x/2)$ ,



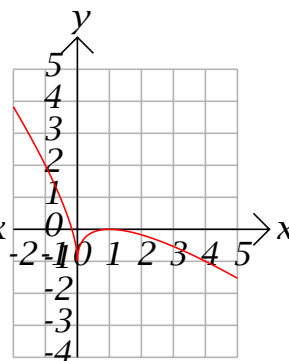
A



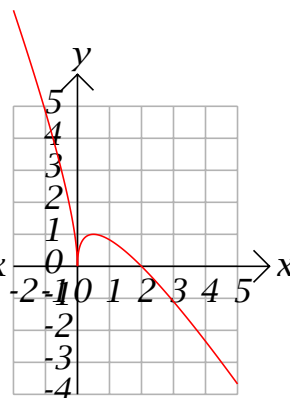
B



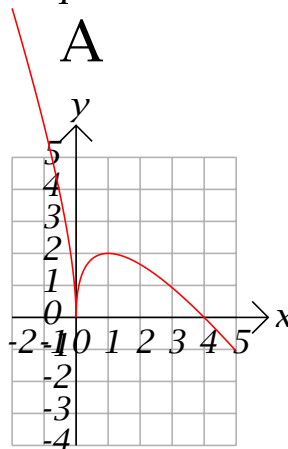
C



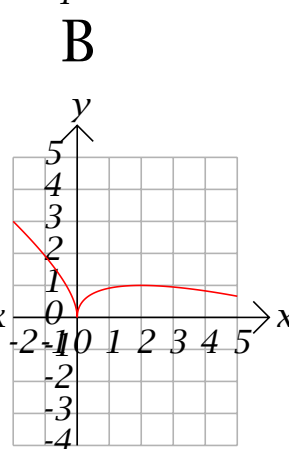
D



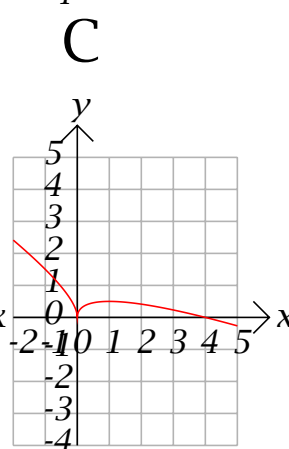
E



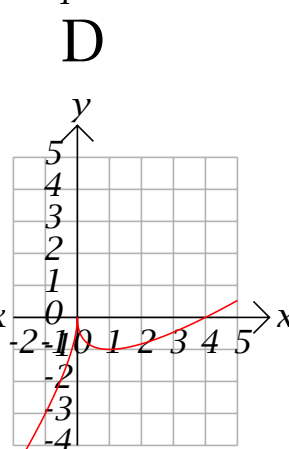
F



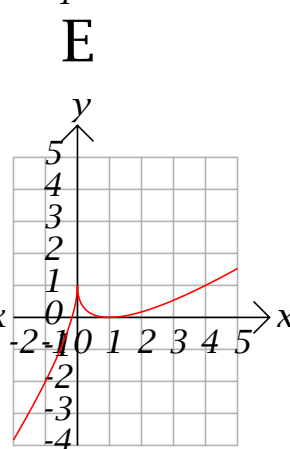
G



H



I



J