

NAME: \_\_\_\_\_

1. 010906b, P.I. A2.A.46

What is the translation that maps the function  $f(x) = x^2 - 1$  onto the function  $g(x) = x^2 + 1$ ?

[A]  $T_{1,-1}$  [B]  $T_{0,1}$  [C]  $T_{-1,1}$  [D]  $T_{0,2}$

2. 060613b, P.I. A2.A.46

Which transformation best describes the relationship between the functions  $f(x) = 2^x$  and  $g(x) = \left(\frac{1}{2}\right)^x$ ?

[A] reflection in the  $y$ -axis  
 [B] reflection in the origin  
 [C] reflection in the line  $y = x$   
 [D] reflection in the  $x$ -axis

3. fall9908b, P.I. A2.A.46

If  $y = 2^x$  and  $y = \left(\frac{1}{2}\right)^x$  are graphed on the same set of coordinate axes, which transformation would map one of these curves onto the other?

[A] reflection in the  $y$ -axis  
 [B] reflection in the origin  
 [C] reflection in the  $x$ -axis  
 [D] reflection in the line  $y = x$

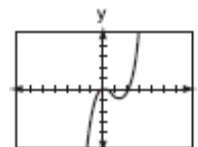
4. 080919b, P.I. A2.A.46

If  $a > 0$ , which function represents the reflection of  $y = a^x$  in the  $y$ -axis?

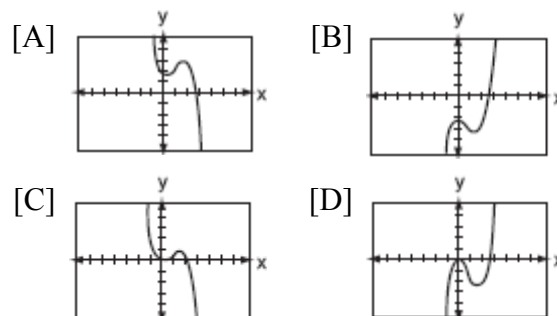
[A]  $y = \left(\frac{1}{a}\right)^{-x}$  [B]  $y = \left(\frac{1}{a}\right)^x$   
 [C]  $y = -a^x$  [D]  $x = a^y$

5. 060701b, P.I. A2.A.46

The accompanying graph represents the equation  $y = f(x)$ .



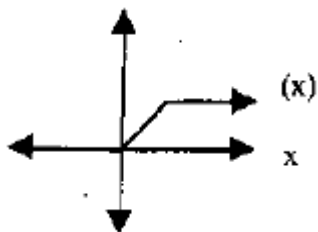
Which graph represents  $g(x)$ , if  $g(x) = -f(x)$ ?



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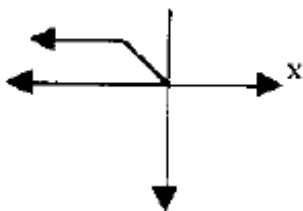
6. fall9903b, P.I. A2.A.46

The graph below represents  $f(x)$ .

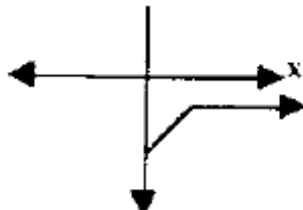


Which of the following is the graph of  $-f(x)$ ?

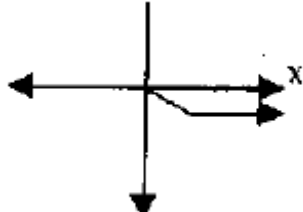
[A]



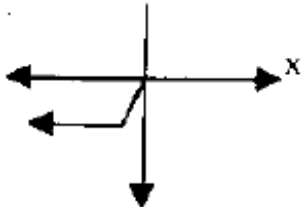
[B]



[C]



[D]



7. 080406b, P.I. A2.A.46

The graph below represents  $f(x)$ .

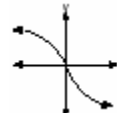


Which graph best represents  $f(-x)$ ?

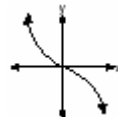
[A]



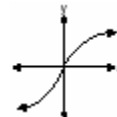
[B]



[C]

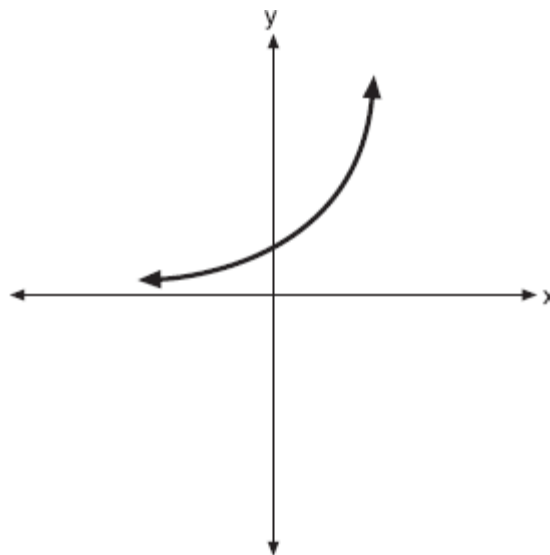


[D]



8. 080721b, P.I. A2.A.46

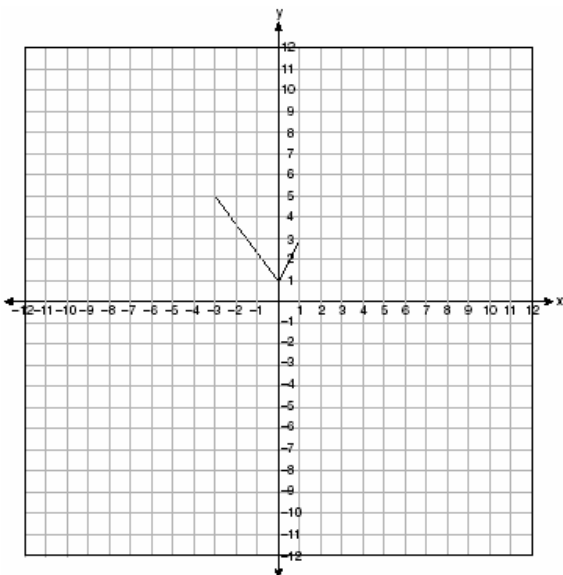
The graph of the function  $f(x) = a^x$  is shown on the accompanying set of axes. On the same set of axes, sketch the reflection of  $f(x)$  in the  $y$ -axis. State the coordinates of the point where the graphs intersect.



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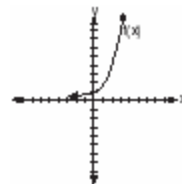
9. 060521b, P.I. A2.A.46

The graph of the function  $g(x)$  is shown on the accompanying set of axes. On the same set of axes, sketch the image of  $g(x)$  under the transformation  $D_2$ .



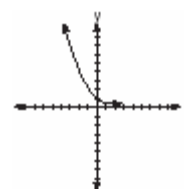
11. 080115b, P.I. A2.A.46

The graph of  $f(x)$  is shown in the accompanying diagram.

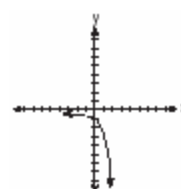


Which graph represents  $f(x)_{r_{x\text{-axis}} \circ r_{y\text{-axis}}}$ ?

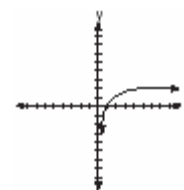
[A]



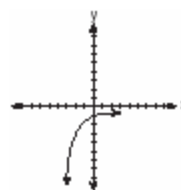
[B]



[C]



[D]



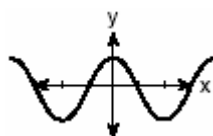
10. 060309b, P.I. A2.A.46

If  $f(x) = \cos x$ , which graph represents  $f(x)$  under the composition  $r_{y\text{-axis}} \circ r_{x\text{-axis}}$ ?

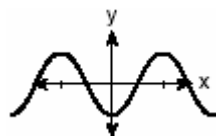
[A]



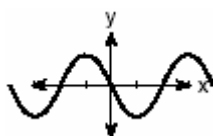
[B]



[C]



[D]



[1] D \_\_\_\_\_

[2] A \_\_\_\_\_

[3] A \_\_\_\_\_

[4] B \_\_\_\_\_

[5] C \_\_\_\_\_

[6] C \_\_\_\_\_

[7] C \_\_\_\_\_

[2] A correct graph is drawn, and the coordinates  $(0,1)$  are stated.

[1] One graphing error is made, but appropriate coordinates are stated.

or [1] A correct graph is drawn, but the coordinates of the point of intersection are not stated or are stated incorrectly

or [1] The coordinates  $(0,1)$  are stated, but no graph is drawn.

[0] A zero response is completely incorrect, irrelevant, or incoherent or is a correct response that was obtained by an obviously

[8] incorrect procedure. \_\_\_\_\_

[2] A graph is sketched that maps  $(-3,5)$  to  $(-6,10)$ ,  $(0,1)$  to  $(0,2)$ , and  $(1,3)$  to  $(2,6)$ .

[1] One graphing or computational error is made, but an appropriate graph is sketched.

[0] A graph is sketched that represents a dilation of only  $x$  or  $y$ .

or [0] A zero response is completely incorrect, irrelevant, or incoherent or is a correct response that was obtained by an

[9] obviously incorrect procedure. \_\_\_\_\_

[10] C \_\_\_\_\_

[11] D \_\_\_\_\_