A2.A.46: Perform transformations with functions and relations: f(x+a), f(x)+a, f(-x), -f(x), af(x)

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

2. 060613b, P.I. A2.A.46
    Which transformation best describes the relationship between the functions $f(x) = 2^x$ and $g(x) = (\frac{1}{2})^x$?

    [A] reflection in the *x*-axis

    [B] reflection in the line $y = x$

    [C] reflection in the origin

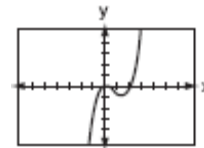   [D] reflection in the *y*-axis

3. fall9908b, P.I. A2.A.46
    If $y = 2^x$ and $y = (\frac{1}{2})^x$ 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 *x*-axis

    [C] reflection in the origin
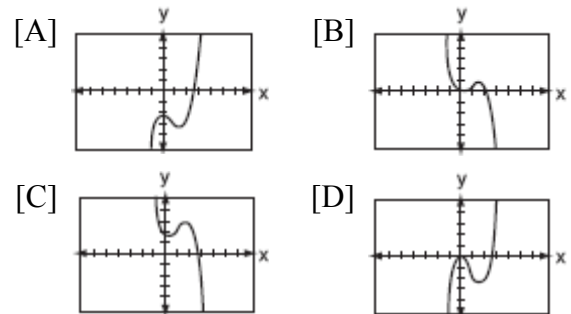
    [D] reflection in the line $y = x$

4. 060701b, P.I. A2.A.46
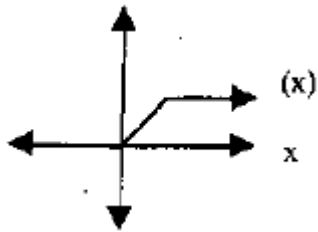   The accompanying graph represents the equation $y = f(x)$.

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

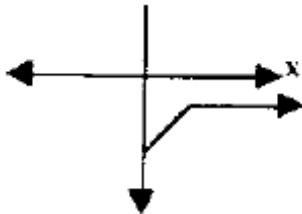   [A]

    [B]

    [C]

    [D]

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

The graph below represents f(x).

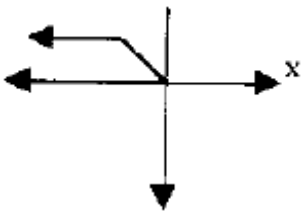Which of the following is the graph of -f(x)?
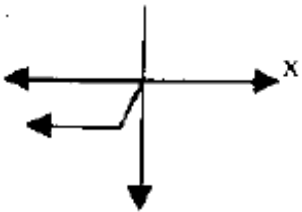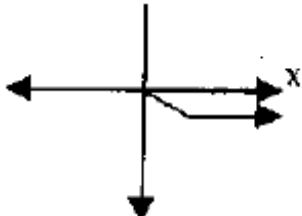
[A]

[B]

[C]

[D]

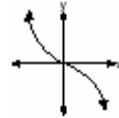6. 080406b, P.I. A2.A.46

The graph below represents f(x).

Which graph best represents f(-x)?
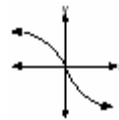
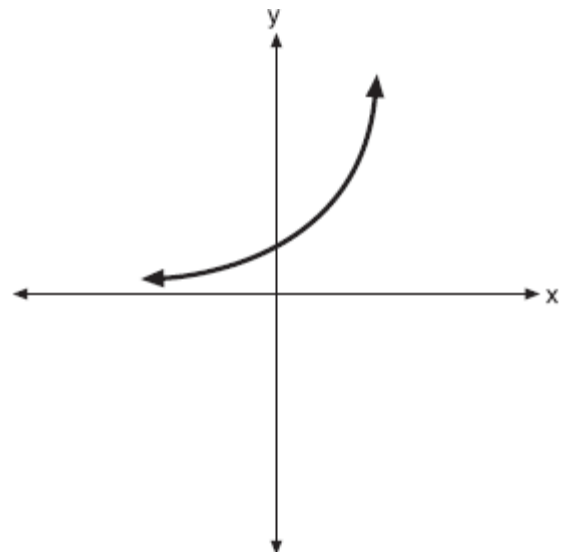[A]   [B]
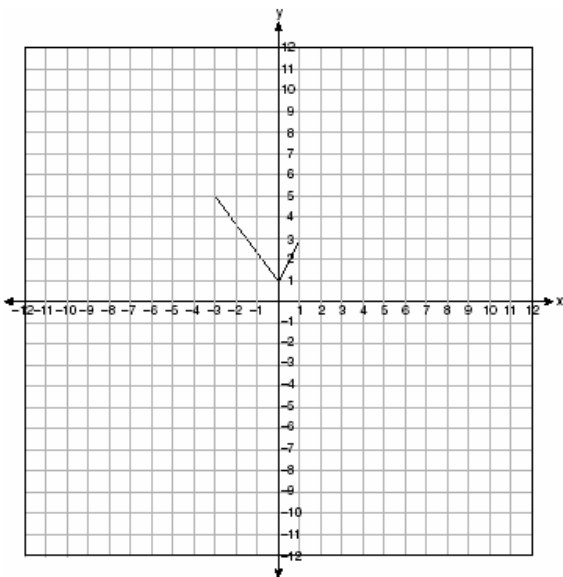
[C]   [D]

7. 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.
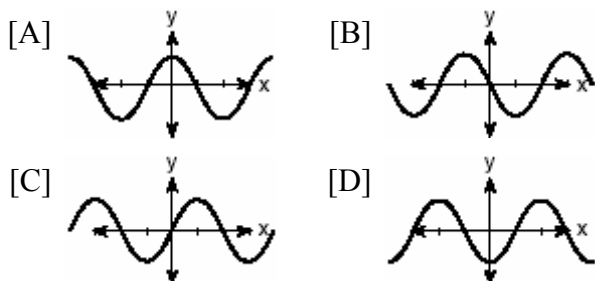
8. 060521b, P.I. A2.A.46
    The graph of the function $g(x)$ is shown on
    the accompanying set of axes. On the same
    set of axes, sketch the image of $g(x)$ under the
    transformation D_2.

10. 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]
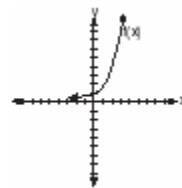

[C]   [D]

9. 060309b, P.I. A2.A.46
    If $f(x) = \cos x$, which graph represents f(x)
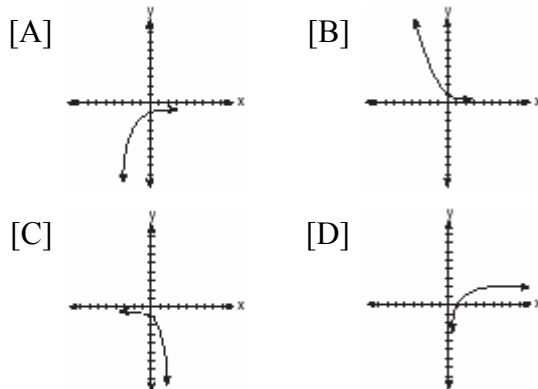   under the composition $r_{y-axis} \circ r_{x-axis}$?

[A]   [B]

[C]   [D]

A2.A.46: Perform transformations with functions and relations: f(x+a), f(x)+a, f(-x), -f(x), af(x)

[1] B _____

[2] D _____

[3] A _____

[4] B _____

[5] D _____

[6] A _____

[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
[7] 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
[8] obviously incorrect procedure. _____

[9] D _____

[10] A _____