

Name _____
Section Leader _____

REMEMBER-Graphing and Programmable Calculators are forbidden!

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1. Find the distance between the points $(-6, -4)$ and $(3, 4)$.

a) $5\sqrt{5}$	b) $6\sqrt{3}$
c) $\sqrt{145}$	d) $5\sqrt{7}$

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2. If $f(x) = 3x + 15$, find $\frac{f(h+2) - f(2)}{h}$

a) $\frac{12}{h}$	b) $\frac{3}{h}$
c) 3	d) 12

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3. Find the domain of the function $f(x) = \sqrt{4-x}$.

a) $(4, \infty)$	b) $(-\infty, 4)$
c) $[4, \infty)$	d) $(-\infty, 4]$

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4. Find the equation of the line that passes through (3, 5) and is parallel to the line $3x + 4y - 8 = 0$.

a) $y = \frac{-3}{4}x + \frac{14}{4}$	b) $y = \frac{-3}{4}x + 2$
c) $y = \frac{3}{4}x + \frac{1}{2}$	d) $y = \frac{-3}{4}x + \frac{29}{4}$

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5. For $f(x) = x^4 + 2$ which of the following are true?

a) $f(x)$ is even.	b) $f(x)$ is both even and odd.
c) $f(x)$ is neither even nor odd.	d) $f(x)$ is odd.

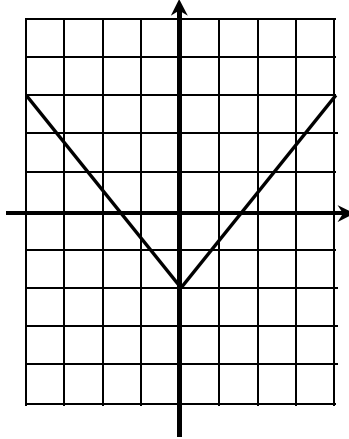
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6. Find the inverse of the function $f(x) = 3 - \sqrt{x-2}$.

a) $f^{-1}(x) = (3-x)^2 + 2$	b) $f^{-1}(x) = (3+x)^2 + 2$
c) $f^{-1}(x) = (3-x)^2 - 2$	d) $f^{-1}(x) = (3+x)^2 - 2$

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7. The complete graph of $f(x)$ is given below. Find the range of $f(x)$.



Assume that each block represents one unit across and one unit high.

a) $[-4, 4]$	b) $(-\infty, 3]$
c) $[-2, 3]$	d) $[0, 5]$

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8. Use $f(x) = x + 2$ and $g(x) = \frac{1}{x}$ to evaluate $(f \circ g)(x)$.

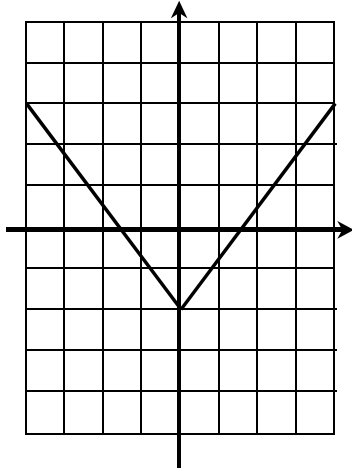
a) $\frac{1}{x+2}$	b) $\frac{1}{x} + 2$
c) $x^2 + 2x$	d) $\frac{1}{x} + x + 2$

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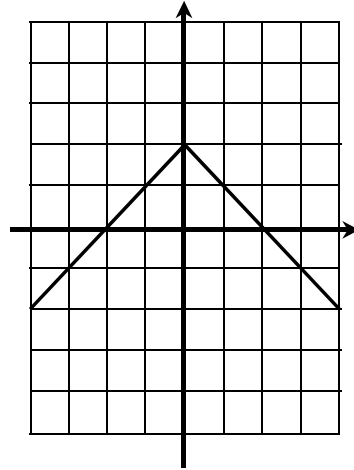
9. Which of the following is the graph of $y = -|x + 2|$?

Assume that each block represents one unit across and one unit high.

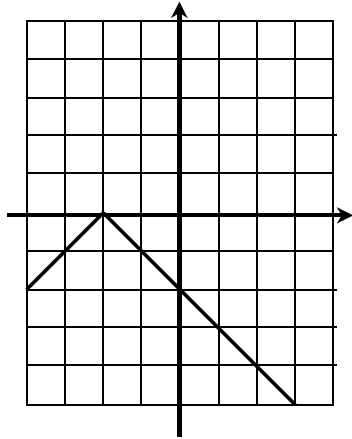
a)



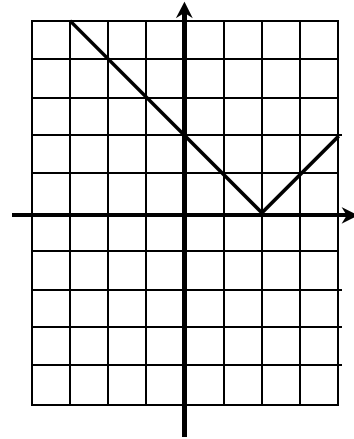
b)



c)

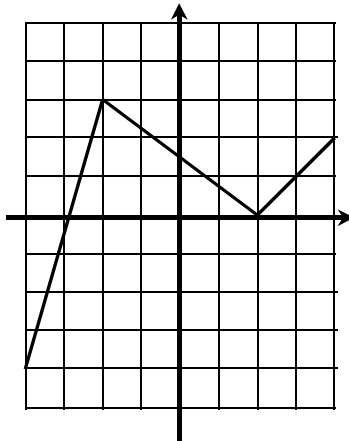


d)



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10. The graph of $y = f(x)$ is given below. Find $f(2)$.

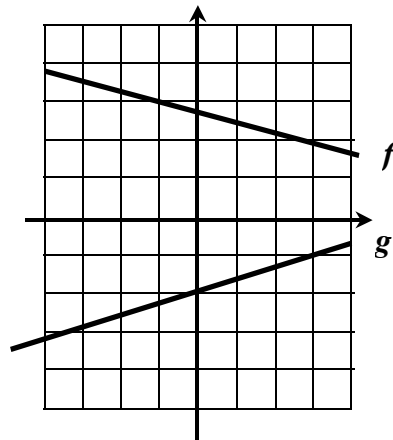


Assume that each block represents one unit across and one unit high.

a) -2	b) -4
c) 0	d) 2

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11. The graphs of the functions f and g are displayed below. What is $g(f(-1))$?

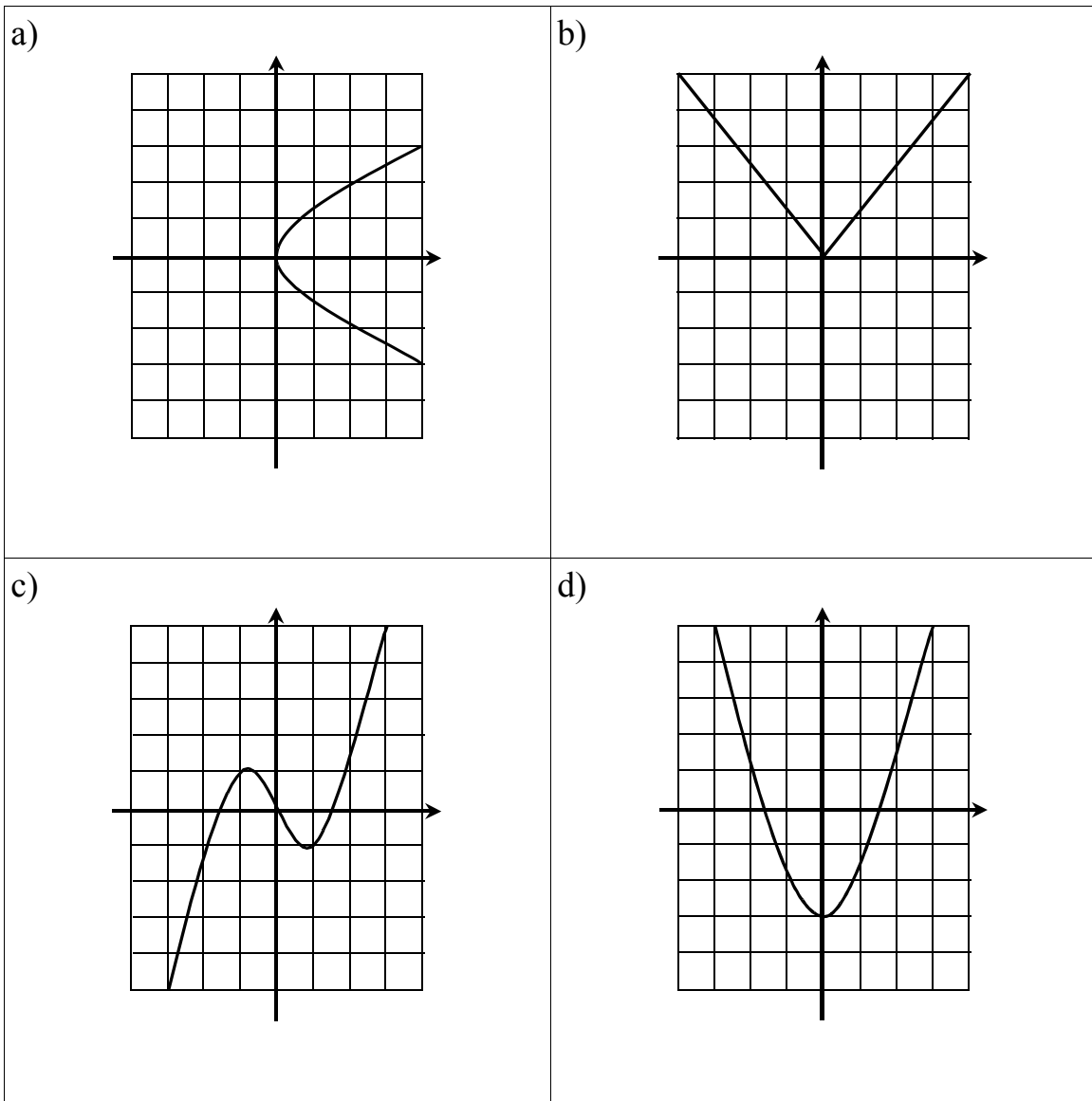


Assume that each block represents one unit across and one unit high.

a) -1	b) -3
c) 2	d) 3

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12. Which of the following graphs is not a function?



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13. Test $y^2 - x - 2 = 0$ for symmetry.

a) symmetric with respect to the x axis	b) symmetric with respect to the y axis
c) symmetric with respect to both the x and y axes	d) symmetric with respect to the origin

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14. Find the center of the circle $x^2 + y^2 + 8x - 6y + 8 = 0$.

a) $(-4, 3)$	b) $(-3, 4)$
c) $(4, 3)$	d) $(-4, -3)$

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15. The demand, x units, and the price (in dollars), p , for a certain product are related by $x = f(p) = 4000 - 200p$. The revenue (in dollars), R , from the sale of x units and the cost (in dollars), C , of producing x units are given respectively by $R(x) = 20x - \frac{1}{200}x^2$ and $C(x) = 10x + 30,000$. Express the profit as a function of the price, p .

a) $-200p^2 + 6,000p - 70,000$	b) $-200p^2 + 6,000p - 40,000$
c) $-200p^2 - 60,000p + 120,000$	d) $-200p^2 + 10,000p - 40,000$

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16. Find an equation of the circle that has its center at $(2, 3)$ and has a radius of 6.

a) $(x+2)^2 - (y+3)^2 = 36$	b) $(x-2)^2 - (y-3)^2 = 36$
c) $(x+2)^2 + (y+3)^2 = 36$	d) $(x-2)^2 + (y-3)^2 = 36$

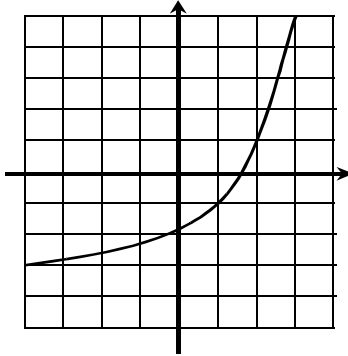
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17. Find the equation of the line that passes through the points $(1, 6)$ and $(5, -2)$.

a) $y = -x + 4$	b) $y = -2x + 8$
c) $y = 2x + 8$	d) $y = -2x - 8$

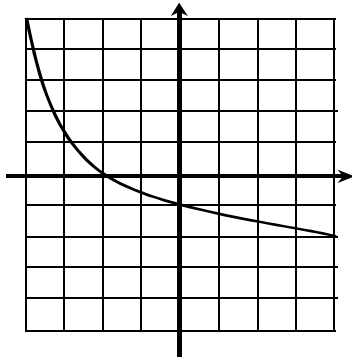
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18. The graph of $f(x)$ is given below.

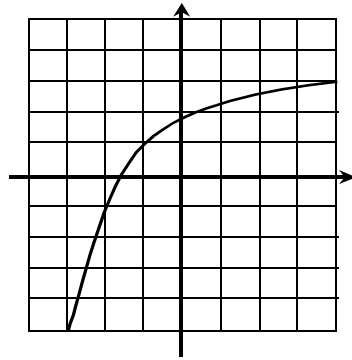


Which is the graph of f^{-1} ?

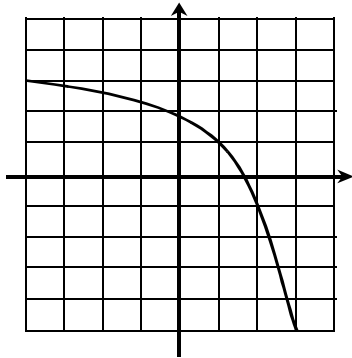
a)



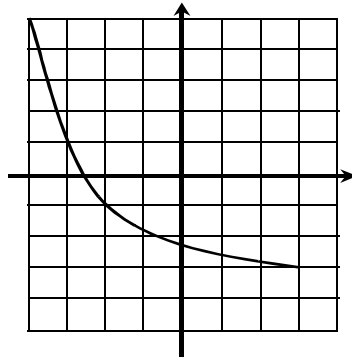
b)



c)

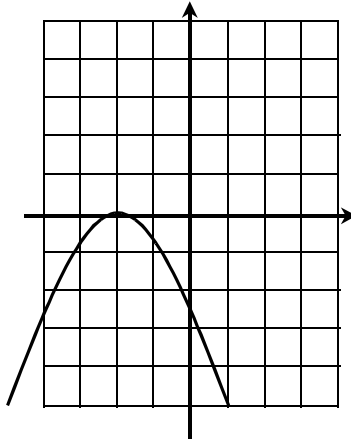


d)



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19. Find the equation of the function whose graph is given below:



Assume that each block represents one unit across and one unit high.

a) $y = (x + 2)^2 + 2$	b) $y = -(x - 2)^2$
c) $y = -(x + 2)^2$	d) $y = -(x - 2)^2 + 2$

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20. Hooke's Law states that the relationship between the stretch, s , of a spring and the weight, w , causing the stretch is linear. For a particular spring, a 5 lb weight causes a stretch of 2 in, while with no weight the stretch of the spring is zero. Find a linear equation that expresses s in terms of w .

a) $s = 5w$	b) $s = \frac{w}{5}$
c) $s = 4w$	d) $s = 0.4w$