

Math 211, Section 1.8

Consider the following graphs. The graph in Figure 1.11 is the graph of $y = f(x)$.

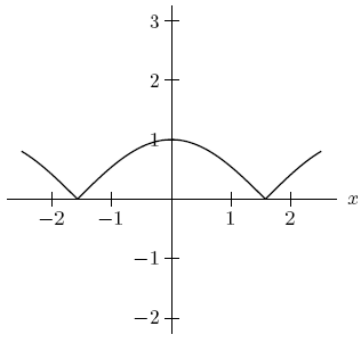
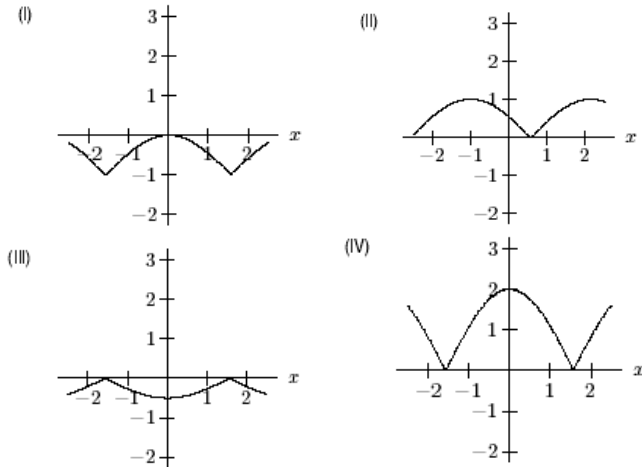


Figure 1.11

1. Which could be a graph of $cf(x)$?
2. Which could be a graph of $f(x) - k$?
3. Which could be a graph of $f(x - h)$?



Consider the following table. Find the following values.

x	$f(x)$	$g(x)$
-2	1	-1
-1	0	1
0	-2	2
1	2	0
2	-1	-2

4. $f(g(1)) =$
5. $f(g(0)) =$
6. $f(g(-1)) =$

7. If $f(g(x)) = 1$ then $x =$
8. If $f(g(x)) = 0$ then $x =$
9. If $g(f(x)) = 2$ then $x =$
10. If $g(f(x)) = -2$ then $x =$

Consider the following graph. Estimate the values

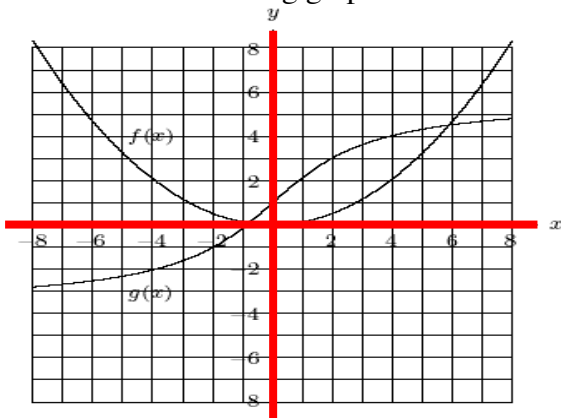


Figure 1.14

11. $g(f(0)) =$
12. $g(f(8)) =$
13. $g(f(3)) =$
14. $f(g(2)) =$
15. $f(g(-1)) =$

16. Given the graph of $f(x)$, sketch the graphs

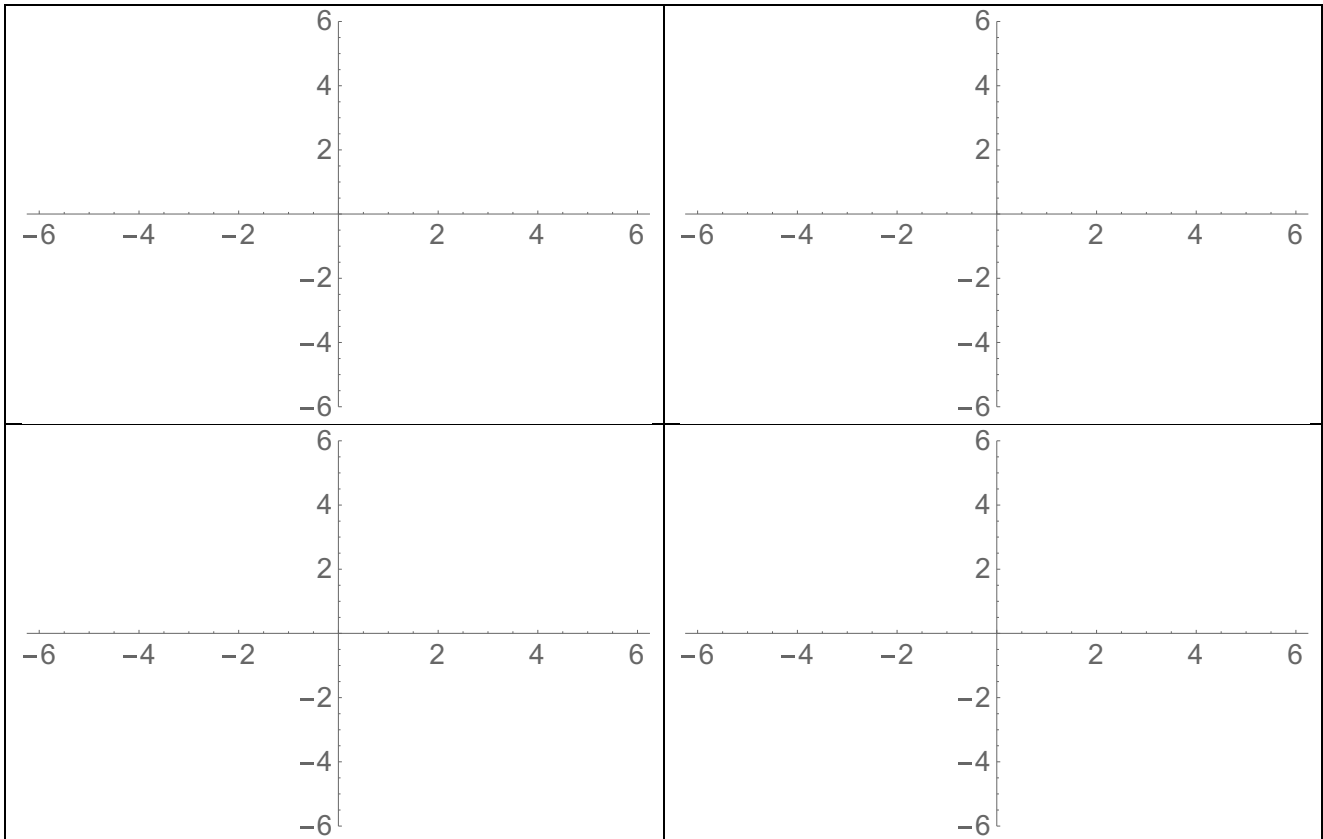
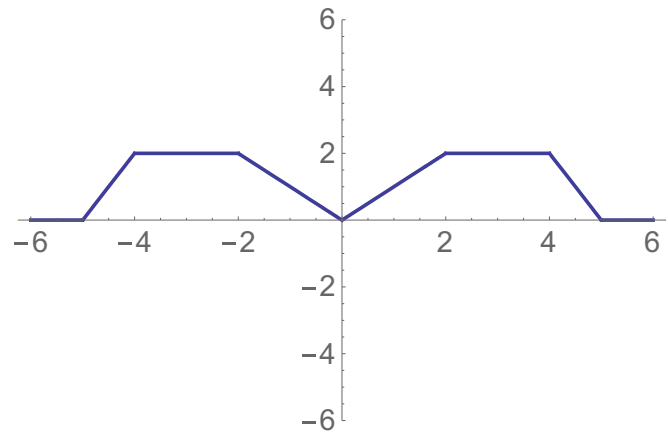
of

a. $2 + f(x)$

b. $2f(x)$

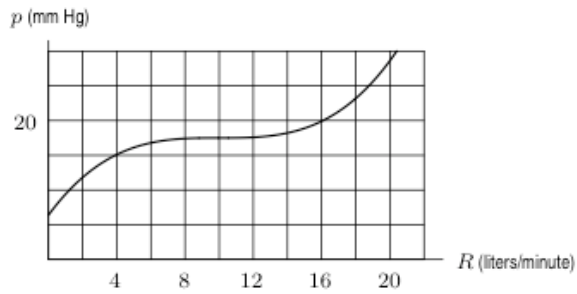
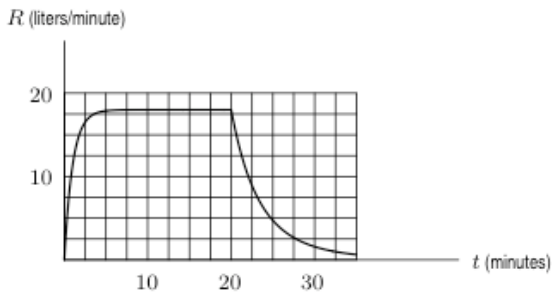
c. $f(x+1)$

d. $\frac{1}{f(x)}$



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17. One of the graphs below shows the rate of flow, R , of blood from the heart in a man who bicycles for twenty minutes, starting at $t = 0$ minutes. The other graph shows the pressure, p , in the artery leading to a man's lungs as a function of the rate of flow of blood from the heart.

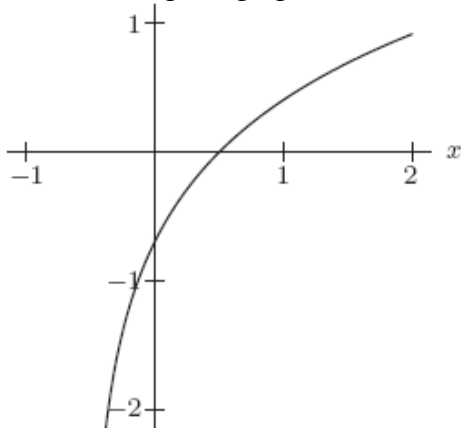


(a) Estimate $p(R(10))$ and $p(R(22))$.

(b) Explain what $p(R(10))$ means in practical terms.

18. If $f(x) = \sqrt{x^2 + 1}$ and $g(x) = e^{x^2}$, then what are $f(g(x))$ and $g(f(x))$?

19. Assuming the graph is of a function involving a logarithm, what might the formula be?



20. Sketch graphs of the following functions:

- (a) $y = -\ln(4+x)$, (b) $y = \ln(4-x)$, (c) $y = 3^{x-4}$, (d) $y = 3^{4-x}$.

21. Given the graphs of the functions g and f below, what is the graph of $f(g(x))$?

