

Use the following information to answer questions 1 – 3

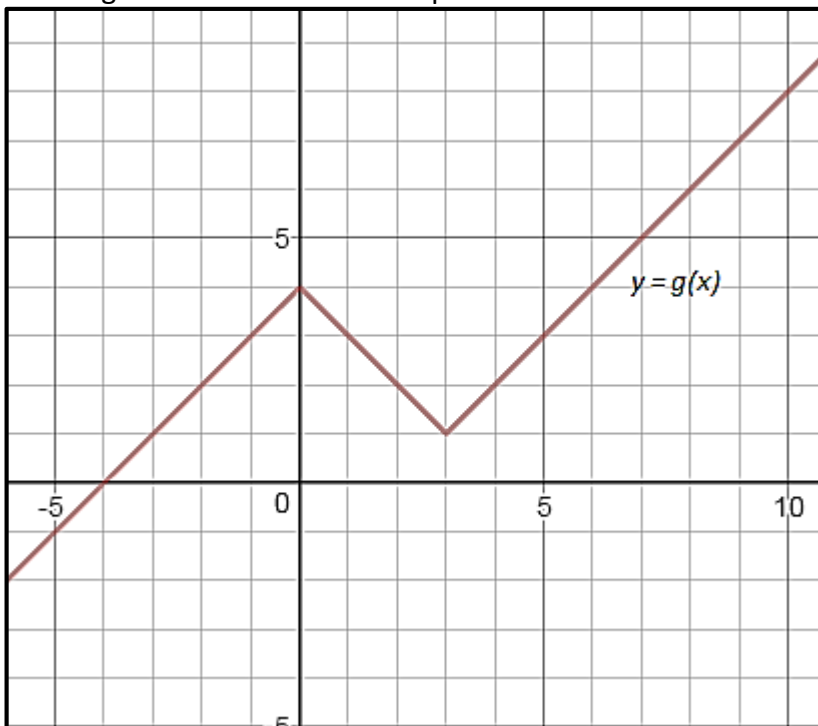
Given that  $f(x) = 3x - 1$ ,  $g(x) = 2 - 2x + 5x^2$ ,  $h(x) = f \circ g(x)$  and  $r(x) = g \circ f(x)$ .

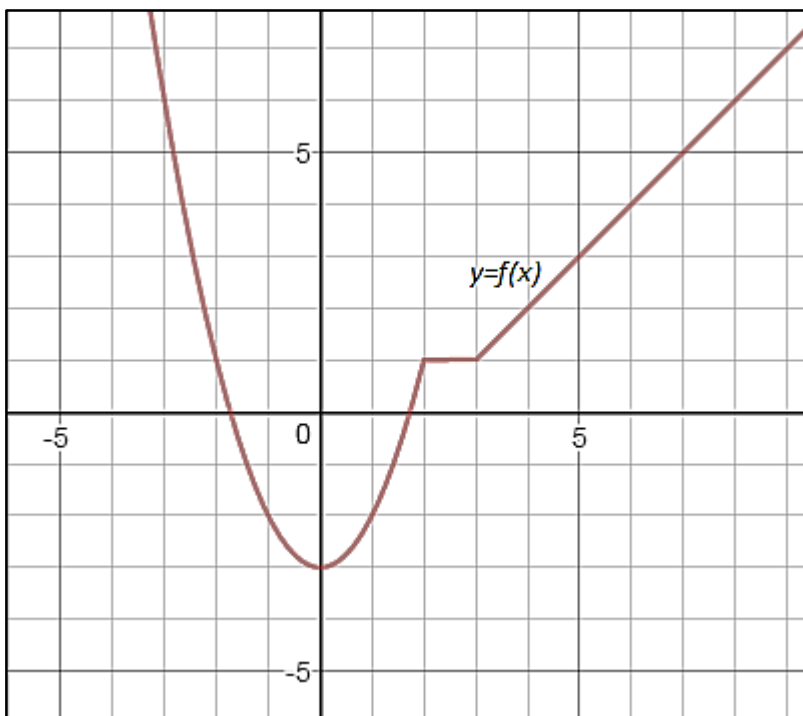
1. Find  $h(x)$ .

2. Find  $r(x)$

3. Find  $h(-2) - r(4)$  32

Use the following information to answer questions 4 – 6





4. Find the value of  $f \circ g(9)$

5. Find the value of  $g \circ f(3)$

6. Find the value of  $g \circ f(-2)$

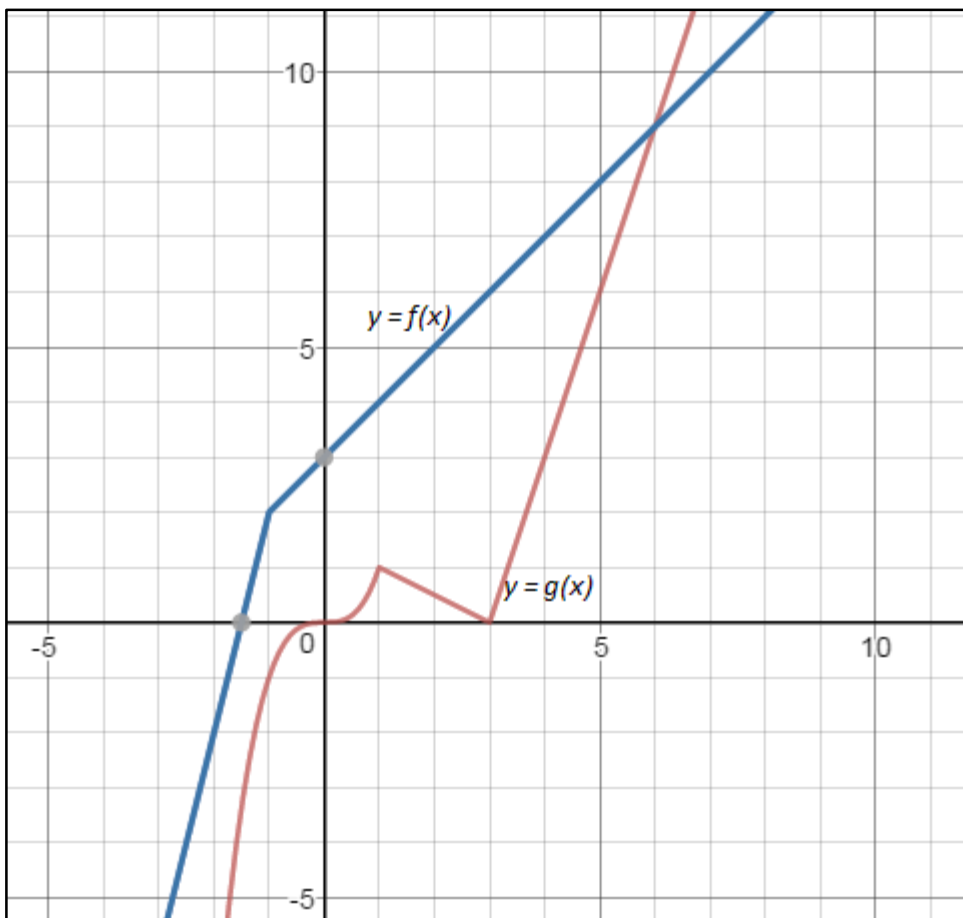
7. Find that  $f(x) = \sqrt{x+3}$  and  $g(x) = \frac{1}{x^2+7}$ , find the have of  $(h(0))^{-1}$ .

8. If  $f(x) = x^2$  and  $g(x) = 3x + 2$  find  $f \circ g(x)$ .

9. Find  $f \circ h(x)$  if  $h(x) = \frac{3}{6-3x}$  and  $f(x) = 1 + 4x$ .

10. Determine the value of  $h(x)$  if  $h(x) = g \circ f(x)$ ,  $f(x) = 2 - 7x^2$  and  $g(x) = -x^2 + 1$ .

Use the following figure to answer the following questions 11 - 15



11. Evaluate  $f \circ g(3)$

12. Find the value of  $g \circ f(3)$

13. Find the value of  $f \circ g(1)$ .

14. Find the value of  $f \circ g(-1)$

15. Find the value of  $g \circ f(2)$

Use the following information to answer questions 16 and 17.

If  $g(x) = \frac{4x^2}{x-2}$  and  $f(x) = x + 2$

16. Find  $g$  of  $f$

17. Find the domain of  $g$  of  $f$

18. Find  $h(g(x))$  if  $h(x) = \sqrt{x^2 + 3}$  and  $g(x) = 2x - 4$

19. Evaluate  $h \circ g(4)$  given that  $h(x) = \frac{5x}{2} - 6$  and  $g(x) = x + 3$ .

20. Find the value of  $f \circ g(-1)$  if  $f(x) = \frac{x}{2x+1}$  and  $g(x) = e^{x+1}$ .

**Answer Keys****Day 118:**

1.  $h(x) = 5 - 6x + 15x^2$

2.  $r(x) = 45x^2 - 36x + 9$

3. 32

4. 5

5. 3

6. 3

7. 10

8.  $9x^2 + 12x + 4$

9.  $\frac{6-x}{2-x}$

10.  $h(x) = -3 + 28x^2 - 49x^4$

11. 3

12. 9

13. 4

14. 2

15. 6

16.  $4x + 16 + \frac{16}{x}$

17.  $\{x|x \neq 0\}$

18.  $h(g(x)) = \sqrt{4x^2 - 16x + 19}$

19.  $\frac{23}{2}$

20.  $\frac{1}{3}$