

**Chain Rule: Station 1**

---

Let  $h(x) = f(g(x))$ . Use the table below to answer the following questions.

$x$	1	2	3
$f(x)$	-2	8	1
$f'(x)$	3	2	4
$g(x)$	1	-3	2
$g'(x)$	4	1	-3

1.  $h(3) =$

2.  $h'(x) =$

3.  $h'(1) =$

4. Write the equation of the tangent line to  $h(x)$  at  $x = 3$ .

**Chain Rule: Station 2**

---

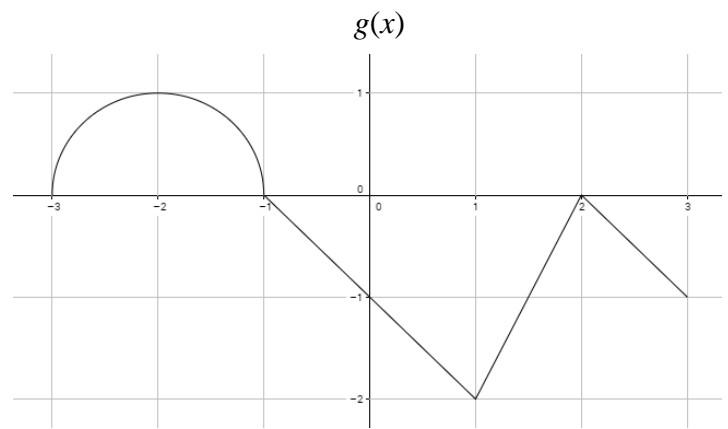
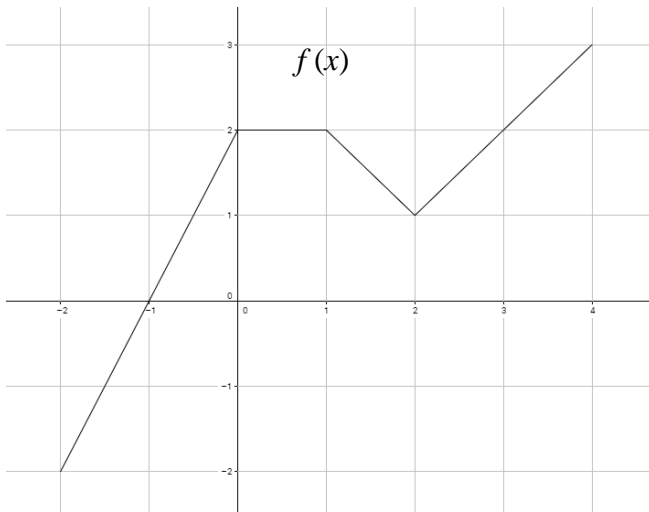
1.  $f(x) = \sin(3x)$   
 $f'(x) =$

2.  $f(x) = x^2 \cos(2x + 3)$   
 $f'(x) =$

3.  $g(x) = \sin^2(3x^2 - 2x + 1)$   
 $g'(x) =$

### Chain Rule: Station 3

---



1. If  $h(x) = g(f(x))$ , find  $h(2)$
2. If  $h(x) = g(f(x))$ , find  $h'(-1)$
3. If  $k(x) = f(x^3)$ , find  $k'(-1)$
4. Find the equation of the tangent line to  $k(x)$  at  $x = -1$ .

**Chain Rule: Station 4**

---

Given that  $s(x) = f(x^3)$ , use the table below to answer the following questions.

$x$	-8	-2	-1	1
$f(x)$	3	1	-1	2
$f'(x)$	4	-3	2	1

1.  $s(-1) =$

2.  $s'(x) =$

3.  $s'(1) =$

4. Write the equation of the tangent line to  $s(x)$  when  $x = -2$

**Chain Rule: Station 5**

---

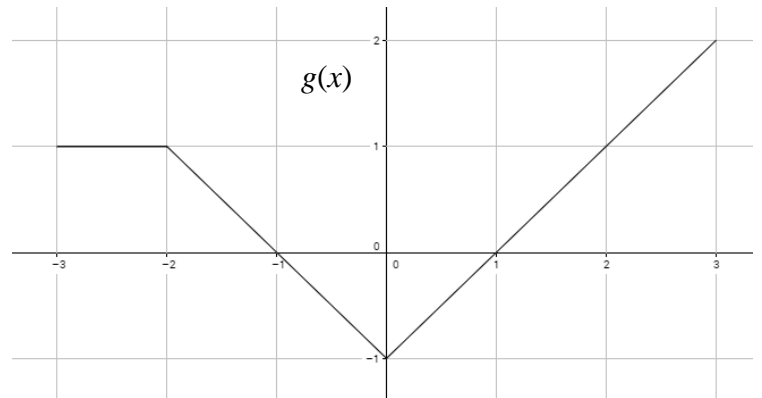
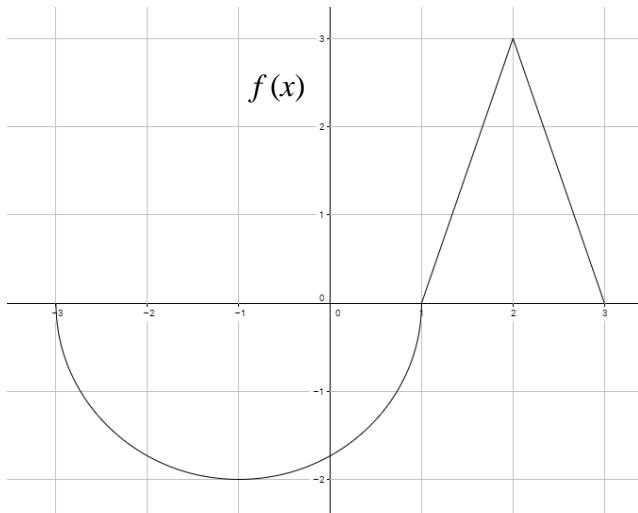
1.  $f(x) = \sqrt{2x}$   
 $f'(2) =$

2.  $f(x) = (x^2 - 2x - 1)^{\frac{2}{3}}$   
 $f'(0) =$

3.  $f(x) = x\sqrt{2x-3}$   
 $f'(x) =$

## Chain Rule: Station 6

---



1. If  $h(x) = f(g(x))$ , find  $h(3)$
  
2. If  $h(x) = f(g(x))$ , find  $h'(2)$ .
  
3. If  $p(x) = g(x^2 - x)$ , find  $p'(-1)$
  
4. If  $q(x) = \frac{f(x)}{(3x-1)^2}$ , find  $q'(-1)$