## **Using the Chain Rule to find the Derivative**

## **The Process:**

1. Given:
2. Identify
3. Substitute and simplify

**Some other helpful rules:**

**Example:**

 *g(x) = 3x*

*,* by definition*.*

 so, we have:

*;* then substitute g(x) and g’(x)

or this can be written as *3*

**Trig with Exponent Example:**

*y definition. , using the power rule.*

 so, we have:

 or this can be written as

**Example:**

 *g(x) =*

 *;* by definition*.*

 so, we have:

; then substitute g(x) and g’(x)

 or this can be written as

**Combination Power and Chain Rule Example**

 so, we have:

; then we need to simplify

 = (4)(-2x)

**Radical exponent Example**

We will also need to use two algebra/exponent rules: .

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 so, we have:

 ; then substitute g(x) and g’(x)

; then we need to simplify

=

**You try’s:**

1. H(x) =
2. H(x) =
3. H(x) =

**Solutions:**