

Directions: Work in your small group to complete this worksheet. Return the completed worksheet along with the homework exercises at the beginning of next class. All answers must be justified and work shown for all credit. Explanations should be written using complete sentences on the lines provided.

1. Compute the derivative for each of the following functions

a) $f(x) = x^\pi$

b) $g(x) = \pi^x$

c) $h(x) = e^\pi$

2. Determine $\frac{d}{dx}(\ln(\cos^2(x)))$



3. Determine $\frac{d}{dx}\left(\frac{\ln(x^2)}{x}\right), x > 0$



4. Use logarithmic differentiation to find $f'(\frac{\pi}{2})$ if $f(x) = x^{\cos(x)}$

5. Use logarithmic differentiation to find the derivative of

$$y = \frac{(2x-1)(x+2)^5}{(1-4x)^7}$$

Homework Exercises Section 3.6 pg. 224: 6, 12, 17, 26, 30, 34, 40, 46, 54, 66, 68

3.6 #6



Answer:

$$f'(x) =$$

3.6 #12



Answer:

$$p'(t) =$$



3.6 #17

○

Answer:

$$T'(z) =$$

3.6 #26

⊖

Answer:

$$y' =$$

□

○

⊖

Answer:

$$y' =$$

$$y'' =$$

□

3.6 #34



Answer:

Domain of f :

$$f'(x) =$$

3.6 #40



Answer:



○

⊖

Answer:

$$y' =$$

□

3.6 #54



Answer:

$$y' =$$



3.6 #66



Answer:

$$y' =$$

U

⊖

⊕

Answer:

$$g'(x) =$$