***Solution*** ***Section* 2.2 – Differentiation Rules**

***Exercise***

Find the derivative of 

***Solution***





***Exercise***

Find the derivative of 

***Solution***



***Exercise***

Find the derivative of 

***Solution***





***Exercise***

Find the derivative of 

***Solution***



***Exercise***

Find the derivative of 

***Solution***







***Exercise***

Find the derivative of 

***Solution***



***Exercise***

Find the first derivative of 

***Solution***





***Exercise***

Find the derivative of 

***Solution***







***Exercise***

Find the derivative of 

***Solution***











***Exercise***

Find the derivative of 

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***Solution***





***Exercise***

Find the derivative of 

***Solution***



***Exercise***

Find the derivative of 

***Solution***



***Exercise***

Find the ***first*** and ***second*** derivatives 

***Solution***





***Exercise***

Find the ***first*** and ***second*** derivatives 

***Solution***





***Exercise***

Find the ***first*** and ***second*** derivatives 

***Solution***





***Exercise***

Find the ***first*** and ***second*** derivatives 

***Solution***





***Exercise***

Find the ***first*** and ***second*** derivatives 

***Solution***





***Exercise***

Find the ***first*** and ***second*** derivatives 

***Solution***







***Exercise***

Find the derivative 

***Solution***





***Exercise***

Find the derivative 

***Solution***



***Exercise***

Find the derivative 

***Solution***





***Exercise***

Find the derivative 

***Solution***





***Exercise***

Find the derivative 

***Solution***



***Exercise***

Find the derivative 

***Solution***





***Exercise***

Find an equation for the line perpendicular to the tangent to the curve  at the point (2, 1).

***Solution***







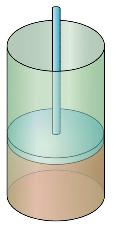
 



***Exercise***

If gas in a cylinder is maintained at a constant temperature *T*, the pressure *P* is related to the volume *V* by a formula of the form



In which *a*, *b*, *n*, and *R* are constants. Find 

***Solution***









***Exercise***

Show that if  is any point on the graph of , then the slope of the tangent line at that point is 

***Solution***









***Exercise***

Show that if  is any point on the graph of , then the slope of the tangent line at that point is 

***Solution***











***Exercise***

Let 

1. Show that , for all 
2. Is this property true for , where *a* is a nonzero real number?
3. Give a geometrical interpretation of this property.
4. Is this property true for ?

***Solution***

1. 











, for all 

1. 











, for all 

1. Line thru  and  is parallel to the tangent line and midpoint is between *x* and *y*.
2. 













 (***N*o**)