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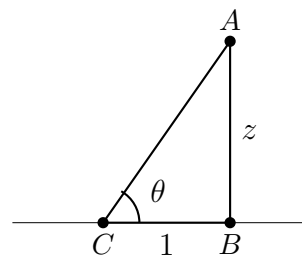
Name: \_\_\_\_\_

1.  $D_x [\sec^{-1}(x)] =$

2.  $D_x [\sin^{-1}(x^3 + 3x)] =$

3.  $D_x [\sqrt{\tan^{-1}(x)}] =$

4. An object (at point  $A$ ) rises vertically above a point  $B$  on the ground. A camera on the ground (at a point  $C$ ), 1 mile from  $B$ , tracks the object and forms an angle  $\theta$  of inclination, as illustrated. Find the function giving the rate of change of  $\theta$  with respect to the object's height  $z$  (in miles).



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Name: \_\_\_\_\_

1.  $D_x [\sin^{-1}(x)] =$

2.  $D_x \left[ \sqrt{\sec^{-1}(x)} \right] =$

3.  $D_x \left[ \tan^{-1}(x^3 + 3x) \right] =$

4. An object (at point  $A$ ) rises vertically above a point  $B$  on the ground. A camera on the ground (at a point  $C$ ), 1 mile from  $B$ , tracks the object and forms an angle  $\theta$  of inclination, as illustrated. Find the function giving the rate of change of  $\theta$  with respect to the object's height  $z$  (in miles).

