

Interpretations of the Derivative Worksheet

Name _____

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1. let $f(t)$ be the number of inches of rain that has fallen since midnight, where t is the time in hours. Interpret the following in practical terms, giving units.
 - (a) $f(10) = 1.4$
 - (b) $f'(10) = 0.1$
 - (c) $f^{-1}(1) = 3$
 - (d) $(f^{-1})'(1.4) = 3$
2. For some painkillers, the size of the dose, D given depends on the weight of the patient, W . Thus, $D = f(W)$, where D is in milligrams and W is in pounds.
 - (a) Interpret the statements, $f(140) = 120$ and $f'(140) = 3$ in terms of this painkiller.
 - (b) Use the information in the statements in part (a) to estimate $f(145)$.
3. A company's revenue from car sales, C (in thousands of dollars), is a function of advertising expenditure, a , in thousands of dollars, so $C = f(a)$.
 - (a) What does the company hope is true about the sign of f' ?
 - (b) What does the statement $f'(100) = 2$ mean in practical terms? How about $f'(100) = 0.5$?
 - (c) Suppose the company plans to spend about \$100,000 on advertising. If $f'(100) = 2$, should the company spend more or less than \$100,000 on advertising? What if $f'(100) = 0.5$?