MATH 287 HOMEWORK 6

ANDREW MOORE

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Exercise 1. The derivative of x^2 is $2x$.

Proof. Let $f(x) = x^2$. Using the limit definition of derivative, we have

$$\begin{aligned}
\lim_{h\to 0} \frac{f(x+h) - f(x)}{h} &=? \\
&=? \\
&=? \\
&=? \\
&=? \\
&=? \\
&=? \\
&=? \\
&=? \\
&=?
\end{aligned} \tag{1}$$

□

Exercise 2. Project 6.9(i), transitive. Prove that the relation defined in the book is transitive.

Exercise 3. Proposition 6.17.

Exercise 4. Explain the proof of Proposition 6.29(i). The textbook gives a proof of Proposition 6.29(i). Rewrite the proof in more detail and with more explanation.