Math 251

Due: Name: _____

0.0.1   Grading rubric for Workshop 05

1. Make sure the vector is parallel to $\langle 1, 3 \rangle$.

2. Make sure that $\vec{v} \cdot \vec{w} = 0$.

3. Make sure the slope is right; $-1/3$.

4. As long as the idea is $\langle x, y \rangle \mapsto y/x$, they're good. If they express confusion about how to write it, my preferred way would be (at this point) $f(\langle x, y \rangle) = y/x$.

5. They should have the correct tangent line, $y = 3x + 1$, or when rearranged, $3x - y = -1$.

6. The line's slope is $-A/B$, and since $\langle A, B \rangle = -B\langle -A/B, 1 \rangle$ with $B \neq 0$, the vectors are parallel.

7. The general tangent line is $y - f(a) = f'(a)(x - a)$, or $f'(a)x - y = f'(a)a - f(a)$.

8. A vector orthogonal to the tangent line would be $\langle 1, f'(a) \rangle$. The dot product is evidently 0, so the claim is proved.