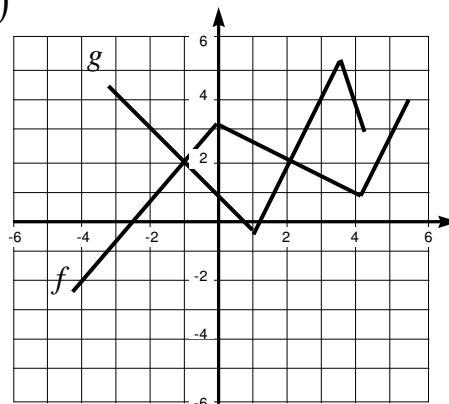


1. Use the graphs of f and g . Let $p(x) = \frac{f(x)}{g(x)}$. Find $p'(-1)$.



Problems 2-11. Find the derivative of the functions below. Each question is worth 5 points. EXACT, FULLY SIMPLIFIED ANSWERS ONLY!!! This means a single rational expression which has NO COMPLEX FRACTIONS or negative powers.

2. $f(x) = \frac{x^2}{(1-3x^2)^9}$

3. $y = \csc 4x$

4. $h(t) = \frac{t}{\sqrt{t+5}}$

5. $g(x) = x \sin x^2$

6. $y = 5 \cos^3(\pi x)^4$

7. $f(\theta) = \sin^2 3\theta$

8. $2x^2 y - 5 \tan y = y^4$

9. Find a constant k such that the given line is tangent to the graph of the function.

Function: $g(x) = k - 3x^2$ Line: $-6x + 2y = 1$

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10. Find an equation of the tangent line to the graph of the circle $(x-1)^2 + (y+5)^2 = 16$ at $x = 3$.

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11. Find the second derivative of $f(x) = \sec 2x$.

