

### Calculus Group Work Handout: Differentiation

The directions for the problems below read “Differentiate”.

In the right column, write the first thing you would do toward a solution.

Example:  $Y = 6^3$

Realize that  $6^3$  is a constant.  $Y' = 0$

1)  $f(r) = \ln(r^2 + 5r)$

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2)  $f(x) = (2x^2 + 4x)^{100}$

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3)  $y = e^x(x^2 + 2)$

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4)  $f(z) = (z^2 - 1)/(z^2 + 1)$

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5)  $y = ((x^2 + 2)^{3/2} * (x^2 + 9)^{4/9}) / (x^3 + 6x)^{4/11}$

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6)  $y = x^{(x^3)}$

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7)  $2xy + y^2 = 6$

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8)  $f(q) = \ln[(q + 1)(q + 2)]$

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9)  $\ln^{\ln}(e^{(6x + 7)})$

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