

## Sample Problems for Parentheses Telephone Activity

A. Simplify  $-3(2 - 4)^2 + 24 \div 3 \times 2$ .

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B. Expand and simplify  $-3x(x + 1)(x - 2)^2$ .

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C. Simplify  $\frac{\frac{1}{x} - \frac{x+1}{x^2}}{x^3}$ .

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D. Simplify  $\frac{\frac{1}{x-b} - \frac{1}{x}}{b}$ .

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E. Evaluate and simplify  $\lim_{h \rightarrow 0} \frac{f(x+h) - f(x)}{h}$  where  $f(x) = x^2 - 5$ .

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F. Let  $f(x) = x^2 - 3x + x^3$ ,  $g(x) = 1 - x$ , and  $h(x) = e^{-x}$ .  
Evaluate and simplify  $f(-1)(g(2+c) + h(0))$ .

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G. Evaluate and simplify  $\lim_{x \rightarrow 5} \frac{\frac{2}{x^2} - \frac{2}{25}}{x - 5}$ .

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H. (for calculus) Evaluate and simplify  $\frac{d}{dx} ((x^2 + x)^3)$ .

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