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Assignment 0

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1) $3x^2 - 4x - 5 = 0$

$a = 3$
$b = -4$
$c = -5$

$$\frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$= \frac{4 \pm \sqrt{16 - 4(3)(-5)}}{6}$$

$$= \frac{4 \pm \sqrt{16 + 60}}{6}$$

$$= \frac{4 \pm \sqrt{76}}{6}$$

$$= \frac{4 \pm 2\sqrt{19}}{6}$$

$$= \frac{2 \pm \sqrt{19}}{3}$$

2) $\qquad f(x) = \dfrac{x}{x+1}$ $\qquad\qquad$ $u = x$
$\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad$ $v = x + 1$

$\left(\dfrac{u}{v}\right)' = \dfrac{u'v - v'u}{v^2}$ $\qquad\qquad$ $u' = 1$
$\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad$ $v' = 1$

$\qquad\qquad = \dfrac{(x+1) - (x)}{(x+1)^2}$

$\qquad\qquad = \dfrac{1}{(x+1)^2}$