

# Math 1513 - College Algebra

Quiz #2 - 2008.09.02

Solutions

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1. Factor the following expressions completely:

a)  $12s^2 - 10sz - 12z^2$

$$12s^2 - 10sz - 12z^2 = 2(2s - 3z)(3s + 2z)$$

b)  $6w^2 - 13wx^2 - 5x^4$

$$6w^2 - 13wx^2 - 5x^4 = (3w + x^2)(2w - 5x^2)$$

2. Perform the following operations:

a)

$$\begin{aligned}\frac{x}{x+y} - \frac{y}{x-y} &= \frac{x-y}{x-y} \cdot \frac{x}{x+y} - \frac{y}{x-y} \cdot \frac{x+y}{x+y} \\ &= \frac{x(x-y) - y(x+y)}{(x-y)(x+y)} \\ &= \frac{x^2 - 2xy - y^2}{x^2 - y^2}\end{aligned}$$

b)

$$\begin{aligned}\frac{x+y}{x} - \frac{x-y}{y} &= \frac{y}{y} \cdot \frac{x+y}{x} - \frac{x-y}{y} \cdot \frac{x}{x} \\ &= \frac{y(x+y) - (x+y)x}{xy} \\ &= \frac{y^2 + 2xy - x^2}{xy}\end{aligned}$$