

$$-12 = 3$$

$$\begin{array}{r} -10 \\ 2 \\ -8 \end{array}$$

Intermediate Algebra - Fall13 - T3S

Name:

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TEST 3 (Show works clearly for full credit)

1. Simplify the rational expression

$$\frac{t^3 - 5t^2 + 6t}{9t - t^3}$$

$$\frac{t(t^2 - 5t + 6)}{t(9 - t^2)} = \frac{t(t-)(t-)}{t(t-3)(t+3)}$$

$$\frac{t(t^2 - 5t + 6)}{t(t-3)(t+3)} = \frac{t(t+2)(t-3)}{t(t-3)(t+3)}$$

$$\boxed{\frac{t+2}{t+3}}$$

$$\begin{array}{r} (t^2 - 2)(t-3) \\ t(9 - t^2) \\ \hline (t^2 - 2)(t-3) \\ t(3-t)(3+t) \\ \hline t^2 - 2 \\ t(3+t) \end{array}$$

$$\begin{array}{r} -5 \\ 2 \\ \hline 6 \end{array} \begin{array}{r} 3 \\ 3 \end{array}$$

2. Divide the rational expressions

$$\frac{2x^2 + 5xy + 3y^2}{3x^2 - 5xy + 2y^2} \div \frac{2x^2 + xy - 3y^2}{3x^2 - 5xy + 2y^2}$$

$$\frac{2x^2 + 5xy + 3y^2}{3x^2 - 5xy + 2y^2} \cdot \frac{3x^2 - 5xy + 2y^2}{2x^2 + xy - 3y^2} =$$

$$\frac{2x^2}{3x^2} + \frac{3y^2}{2y^2} \cdot x^2 - 4xy - y^2$$

$$(x^2 + y^2)(x^2 - 4xy - y^2)$$

$$(x+y)(x+y)xy(x-4-y)$$

$$-4$$