

## Algebra 3 Assignment # 14

**Simplify Completely:**

$$(1) \frac{2x}{x^2-9} + \frac{x}{x^2+6x+9} - \frac{3}{x+3}$$

$$(2) \frac{x+3}{5-x} - \frac{x-5}{x+5} + \frac{2x^2+30}{x^2-25}$$

$$(3) \cdot \frac{x^3+x^2-12x}{x^2-3x} \bullet \frac{3x^2-10x+3}{3x^2+11x-4}$$

$$(4) \frac{3x^2+3x-6}{2x^2+6x+4}$$

$$(5) (x^3-x^2-x+10) \div (x^2-3x+5)$$

$$(6) \frac{\frac{1}{4+h} - \frac{1}{4}}{h}$$

$$(7) \frac{\frac{1}{x^2} - \frac{1}{16}}{x+4}$$

$$(8) \frac{x^{-1} - y^{-1}}{\frac{1}{x^2} - \frac{1}{y^2}}$$

**Answers:**

$$1. \frac{3(x+9)}{(x-3)(x+3)^2}$$

$$2. \frac{2}{x+5}$$

$$3. x-3$$

$$4. \frac{3(x-1)}{2(x+1)}$$

$$5. x+2$$

$$6. -\frac{1}{4(4+h)}$$

$$7. \frac{4-x}{16x^2}$$

$$8. \frac{xy}{y+x}$$