Alg 2 Homework # 23 SOLUTIONS
3 JANUARY 2024

1. a) $(x+2)^3 \neq x^3+8$

b) $x^6+x \neq (x-1)(x^5+x^4+x^3+x^2+x)$

→ c) $(x^2-1)(x^4+x^2+1) = x^6-1$ yes

d) $(x+1)^4 \neq x^4+x^3+x^2+x+1$

→ e) $(x+1)(x^4-x^3+x^2-x+1) = x^5+1$ yes

→ f) $(x^3-1)(x^3+1) = x^6-1$ yes

2. $2(x+1)^2 \neq (2x+2)^2 = 4(x+1)^2$ No

3. multiply by x to eliminate the denominator

4. An identity is true for all values x, not just two.

5. 1) $0 < x < 3$ cm x = radius
2) 10 in^2

6. $\frac{3x+1}{x} = \frac{1}{x-3}$ multiply by $x(x-3)$

$(x-3)(3x+1) = x$

$3x^2-9x+x-3 = x$

$3x^2-9x-3 = 0$

$x-3x-1 = 0$ $x = \frac{-b \pm \sqrt{b^2-4ac}}{2a}$

$x = \frac{3 \pm \sqrt{9+4}}{2} = \frac{3 \pm \sqrt{13}}{2}$