

Alg 2

Ch 6 (6.1-6.4)

Retake Study Guide

SHOW ALL WORK

Prove the following identity:

↑
Pick one side to
work on... make it
look like other

$$(x+y)^4 = x^4 - 4x^3y + 6x^2y^2 - 4xy^3 + y^4$$

② Which of the following can be verified numerically?
↑
plug in values
+ see if eqns
balance

a) $(a-b)(a+b)^2 = a^3 - a^2b + ab^2 - b^3$

b) $n(n+1)(n+2) = n^3 + 3n^2 + 2n$

Factor each of the following expressions. DO NOT SOLVE.

③ $2x^3 + 128$ ④ $8x^3 - 125$ ⑤ $x^5 - 3x^3 - 18x$ ⑥ $x^4 - 25x^2 + 144$

Solve each polynomial equation.

⑦ $x^4 - 81 = 0$ ⑧ $2x^3 - 1 = 0$ ⑨ $x^3 + 125 = 0$ ⑩ $x^4 - 8x^2 + 12 = 0$

Graph each by finding zeros, noting any multiplicities, finding end behavior.

⑪ $y = x^4 - 29x^2 + 100$ ⑫ $y = -x^4 + 10x^2 - 9$

Solve by graphing. State what you made y_1, y_2 , give a window + provide a sketch.

⑬ $15x^4 = 11x^3 + 14x^2$

⑭ A rectangular box is 24 in long, 12 in wide and 18 in tall. If each dimension is increased by x inches,
a) write an equation for the volume, $V(x)$ of the box.
b) For what values of x is Volume defined?