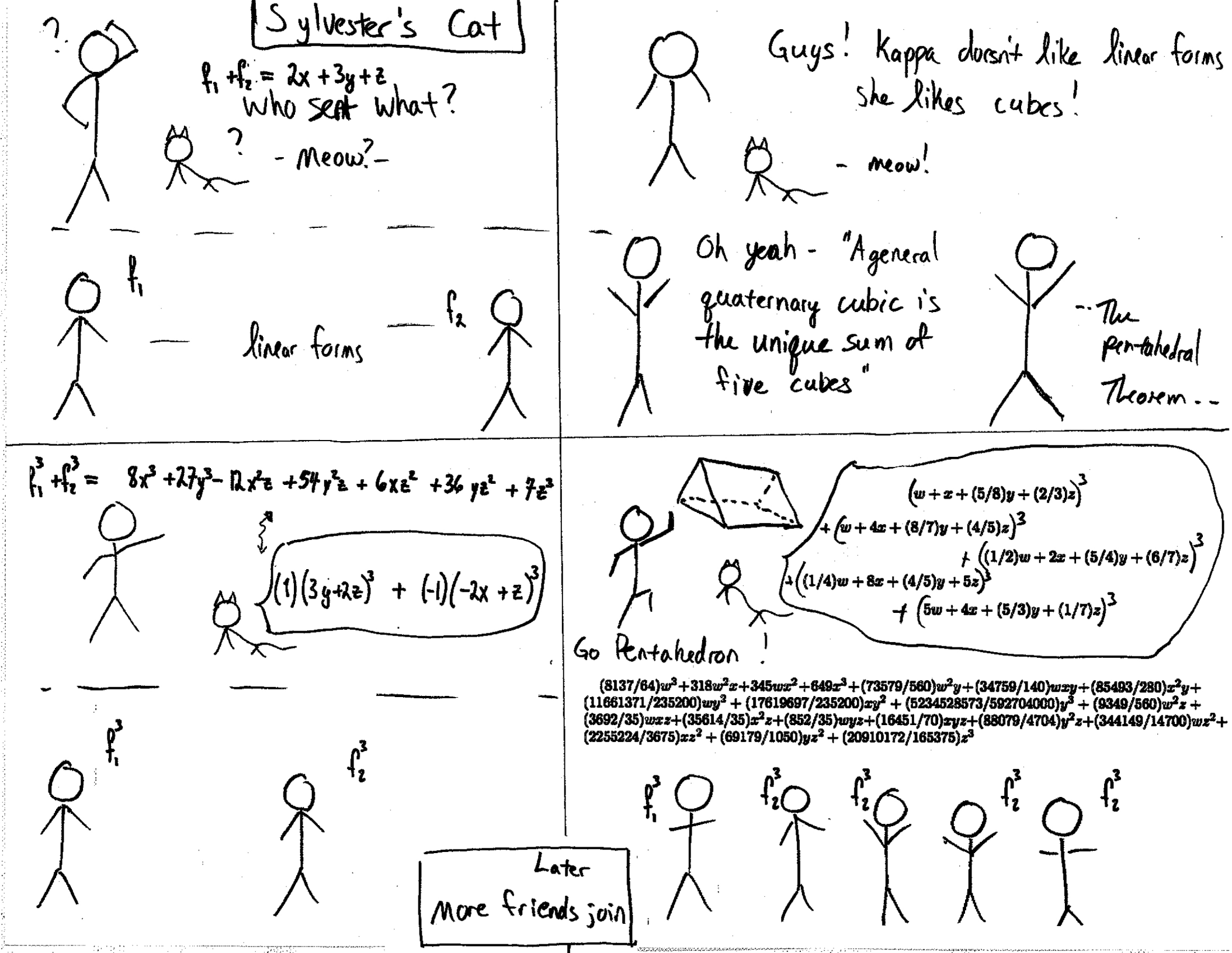
Sylvester's Cat
$f_1 + f_2 = 2x + 3y + z$
Who seat what?
?
- Meow? -
f_1
linear forms
f_2
Guys! Kappa doesn't like linear forms she likes cubes!
- meow!
Oh yeah - "A general quaternary cubic is the unique sum of five cubes"
-- The Pentahedral Theorem --
$f_1^3 + f_2^3 = 8x^3 + 27y^3 - 12x^2z + 54y^2z + 6xz^2 + 36yz^2 + 7z^3$
$(1)(3y+2z)^3 + (-1)(-2x+z)^3$
$(w + x + (5/8)y + (2/3)z)^3$
$+ (w + 4x + (8/7)y + (4/5)z)^3$
$+ ((1/2)w + 2x + (5/4)y + (6/7)z)^3$
$+ ((1/4)w + 8x + (4/5)y + 5z)^3$
$+ (5w + 4x + (5/3)y + (1/7)z)^3$
Go Pentahedron!
$(8137/64)w^3 + 318w^2x + 345wx^2 + 649x^3 + (73579/560)w^2y + (34759/140)wxy + (85493/280)x^2y + (11661371/235200)wy^2 + (17619697/235200)xy^2 + (5234528573/592704000)y^3 + (9349/560)w^2z + (3692/35)wxz + (35614/35)x^2z + (852/35)wyz + (16451/70)xyz + (88079/4704)y^2z + (344149/14700)wz^2 + (2255224/3675)xz^2 + (69179/1050)yz^2 + (20910172/165375)z^3$
f_1^3
f_2^3
Later
More friends join