Subtracting Polynomials

In 'n' Out

- 4 cheeseburgers, 2 double cheeseburgers, 1 more cheeseburger, 1 fry and 2 hamburgers

$$4c + 2c^2 + 1c + 1 + 2h$$

- 2 double cheeseburger, 2 double hamburgers and 4 fries. Actually, can you take away 1 double hamburger and 1 double cheeseburger?

$$(2c^2 + 2h^2 + 4) - (h^2 + c^2)$$
$$(2c^2 - c^2) + (2h^2 - h^2) + 4$$
$$c^2 + h^2 + 4$$

Ex: $(4x^2 - 3x + 5) - (3x^2 - x - 8)$

$$(4x^2 - 3x + 5) - 1 \cdot (3x^2 - x - 8)$$
$$4x^2 - 3x + 5 - 3x^2 + x + 8$$
$$x^2 - 2x + 13$$

Ex: $(4x^2 - 2x + 8) - (x^2 + 3x - 2)$

$$4x^2 - 2x + 8 - x^2 - 3x + 2$$
$$3x^2 - 5x + 10$$

Ex: $(6c^2 - c + 1) - (-4 + 2c^2 + 8c)$

$$6c^2 - c + 1 + 4 - 2c^2 - 8c$$
$$4c^2 - 9c + 5$$

Skills Lab

$(x^3 - 3x + 1) - (x^3 + 7 - 12x)$

$(x^2 + y^2 - 6) - (5x^2 - y^2 - 5)$

$(7t^2 + 2 - t) + (t^2 - 7 - 2t)$

Practice

$(5a^2 + 6a + 2) - (7a^2 - 7a + 5)$

$(5b^2 - 8 + 2b) - (b + 9b^2 + 5)$

Two bottle rockets are launched straight into the air. The height in feet, of each rocket at t seconds after launch is given by the polynomial equations below. How much higher did Rocket A travel?

Rocket A: $H_1 = -16t^2 + 122t$

Rocket B: $H_2 = -16t^2 + 84t$