

(c) Yes

$$-2x^3 - 11x^2 + 3x + 2 = 4(x^3 - 2x^2 + 3x - 1) - 3(2x^3 + x^2 + 3x - 2)$$

(d) Yes

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

(e) No

(f) No

5. Solution:

(a) Yes

$$(2, -1, 1) = (1, 0, 2) - (-1, 1, 1)$$

(b) No

(c) No

(d) Yes

$$(2, -1, 1, -3) = 2(1, 0, 1, -1) - (0, 1, 1, 1)$$

(e) Yes

$$-x^3 + 2x^2 + 3x + 3 = -(x^3 + x^2 + x + 1) + 3(x^2 + x + 1) + (x + 1)$$

(f) No

(g) $(3, 4, -2)$