a) $2u + 3v - 4w$

$2(2,3,-1) + 3(0,-1,2) - 4(1,0,-2)$

$(4,6,-2) + (0,-3,6) - (4,0,-8)$

$(0, 3, 12)$

b) $|u + v|$

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

$|(2,2,1)| = \sqrt{2^2 + 2^2 + 1^2} = \sqrt{9}$

$= 3$

c) $|2v - w|$

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

$(0,-2,4) - (1,0,-2) = (-1,-2,6)$

$\sqrt{(-1)^2 + (-2)^2 + 6^2} = 1 + 4 + 36 = \sqrt{41}$