Example #1 p. 4 Ch. 9

Give the position vector for

$4\boldsymbol{i} + -7\boldsymbol{j}$

Understand what *i* & *j* stand for

- *i* stands for the unit vector <1, 0>

So, $4i = 4 \bullet \langle 1, 0 \rangle = \langle 4, 0 \rangle$

- *j* stands for the unit vector <0, 1>

So, $-7j = -7 \bullet \langle 0, 1 \rangle = \langle 0, -7 \rangle$

Finally, add 4i + -7j

- Add the horizontal components

$$4i_a + -7j_a = 4 + 0 = 4$$

- Add the vertical components

$$4i_b + -7j_b = 0 + -7 = -7$$

Thus, $4\boldsymbol{i} + -7\boldsymbol{j}$ is

$4\boldsymbol{i} + -7\boldsymbol{j} = \langle 4, -7 \rangle$

Note: There is no need to go through all the work, just take I's numeric coefficient and put it in for the horizontal component and take j's numeric coefficient and put it in for the vertical component.