Answer on Question #62726-Physics-Mechanics-Relativity

What must be the component of a vector which added the following vectors 10i-7j and 4i + 2j gives rise to a vector 7j?

Solution

1.

$$10\mathrm{i} - 7\mathrm{j} + \mathrm{xi} + \mathrm{yj} = 7\mathrm{j}$$

$$10 + x = 0 \rightarrow x = -10$$

$$-7 + y = 7 \rightarrow 14$$

Answer: $-10\mathbf{i} + 14\mathbf{j}$.

2.

$$4\mathrm{i} + 2\mathrm{j} + \mathrm{xi} + \mathrm{yj} = 7\mathrm{j}$$

$$4 + x = 0 \rightarrow x = -4$$

$$2 + y = 7 \rightarrow 5$$

Answer: $-4\mathbf{i} + 5\mathbf{j}$.