1) Posto $\mathbf{U} = -2\,\mathbf{i}_x + 4\,\mathbf{i}_y$ e $\mathbf{V} = 2\,\mathbf{i}_y$

a) calcolare la componente x di $\mathbf{V} - 3\,\mathbf{U}$

$0 - 3(-2) = 6$

b) calcolare $(\mathbf{V} - \mathbf{U}) \cdot \mathbf{U}$

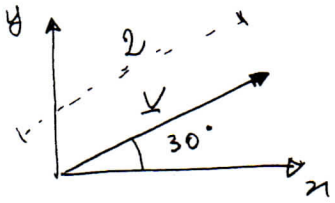
$(2\,1_x - 2\,1_y) \cdot (-2\,1_x + 4\,1_y) = -4 - 8 = -12$

c) calcolare $|-\mathbf{V} \times \mathbf{U}|$

$\underline{V} \times \underline{U} = 2\,1_y \times (-2\,1_x + 4\,1_y) = -4\,1_y \times 1_x = 4\,1_z$

$|-\underline{V} \times \underline{U}| = 4$

2) Si consideri il vettore $\mathbf{V}$ di figura



a) calcolare la componente x di $\mathbf{V}$

$2 \cos 30° = \sqrt{3}$

b) calcolare la componente y di $2\mathbf{V}$

$2 \cdot 2 \cdot \text{sen}\, 30° = 2$

3) Il vettore $\mathbf{V}$ varia linearmente con x. Sapendo che $\mathbf{V}(x = 0) = 4\,\mathbf{i}_y$ e $\mathbf{V}(x = 2) = \mathbf{i}_x + 6\,\mathbf{i}_y$, calcolare $\mathbf{V}(x = 1)$

$\underline{V} = \underline{A}\,x + \underline{B}$ con $\underline{A}$ e $\underline{B}$ costanti

dai dati $\underline{B} = 4\,\underline{1}_y$ $\quad \underline{A} = \frac{1}{2}\left[1_x + 2\,1_y\right] = \frac{1}{2}\,\underline{1}_x + \underline{1}_y$

$\underline{V}(x = 1) = \underline{A} + \underline{B} = \frac{1}{2}\,1_x + 5\,\underline{1}_y$