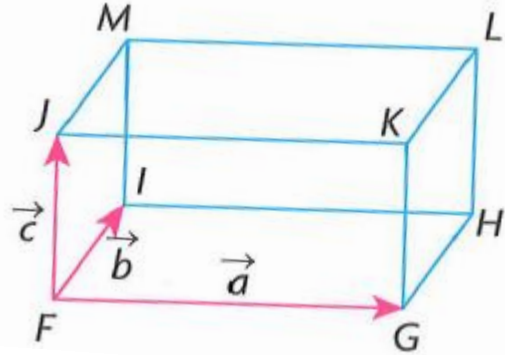


Unit 1 Review Questions

- Two unit vectors \hat{a} and \hat{b} make an angle of 70° with each other. Find the magnitude of the vector $3\hat{a} + 4\hat{b}$ (to the nearest tenth), and the direction it makes with \hat{a} . (to the nearest degree). Include a sketch.
- Examine the diagram below. Find an expression for each of the following in terms of \vec{a} , \vec{b} and \vec{c} . (no justification required)

- \overline{FL}
- \overline{MK}
- \overline{HJ}
- $\overline{IK} - \overline{IH}$



- Let $\vec{x} = (1, -2, 3)$ and $\vec{y} = (0, 1, -1)$.
 - Find $2\vec{x} - 3\vec{y}$.
 - Find the angle vector \vec{x} makes with the positive y-axis.
 - Find $|\vec{y}|$.
 - Find a unit vector that has the opposite direction of \vec{x} .

Review problems from the textbook :

page 153 #5, 8,9,11, 12, 13

Page 155 #3, 7

Page 197 #2a, 4a

ANSWERS to #1 – 3

- $|3\hat{a} + 4\hat{b}| \approx 5.76$, angle is approx.. 41°
- a) $\vec{a} + \vec{b} + \vec{c}$ b) $\vec{a} - \vec{b}$ c) $\vec{c} - \vec{a} - \vec{b}$ d) $\vec{c} - \vec{b}$
- a) $(2, -7, 9)$ b) 122° c) $\sqrt{2}$ d) $\left(\frac{-\sqrt{14}}{14}, \frac{\sqrt{14}}{7}, \frac{-3\sqrt{14}}{14}\right)$