**, and notation**

In 2D you were previously introduced to and as unit vectors in each of the and directions.

It meant for example that could be written as since

Unsurprisingly, **in 3D:**

**Quickfire Questions**

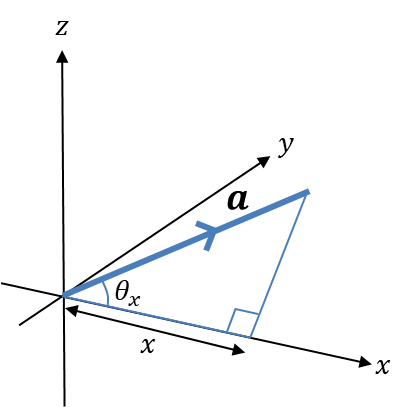
1. Put in notation:
2. Write as a column vector:
3. If then
4. If and then

**Examples**

1. Find the magnitude of and hence find , the unit vector in the direction of .
2. If and is parallel to ?

**Angles between vectors and an axis**

How could you work out the angle between a vector and the -axis?



* **The angle between and the -axis is:**

**and similarly for the and axes.**

[Textbook] **Find the angles that the vector makes with each of the positive coordinate axis.**

***Test Your Understanding***

[Textbook] **The points and have position vectors and**

**relative to a fixed origin, . Find and show that is isosceles.**

**(a) Find the angle that the vector makes with the -axis.**

**(b) By similarly considering the angle that makes with the -axis, determine the area of where and . (Hint: draw a diagram)**

Ex 12B p.341-343