IB Math 2 Vectors Notes Day 2



**14C Vectors in the Plane**



A translation of *a* units in the *x*-direction and *b* units in the *y*-direction

can be written as a vector in **component form**: 

|  |  |
| --- | --- |
|  | Write the coordinates of point P:  Write the vector in component form:  = |
| **Base Unit Vectors**  The unit vector in the *x*-direction:  The unit vector in the *y*-direction: | Write the vector in unit vector form:  = |

Example 1

|  |  |  |
| --- | --- | --- |
|  | Write  and  in… |  |
| Component Form | Unit Vector Form |

**14D Magnitude**

|  |  |
| --- | --- |
| What is the magnitude of ? Magnitude = Length | Given a vector , the magnitude  of **v** is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

Example 2 Given  and , find  and .

A **unit vector** has length one unit. Examples: , , 

Example 3 Find *k* if  is a unit vector.

****

**14E Operations with Plane Vectors**

, 

Vector Addition



Vector Subtraction



Scalar Multiplication



Example 4 , 

a.  b.  c. 