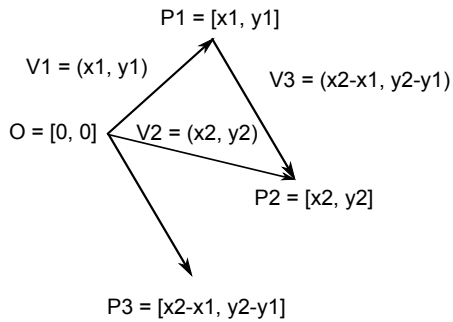
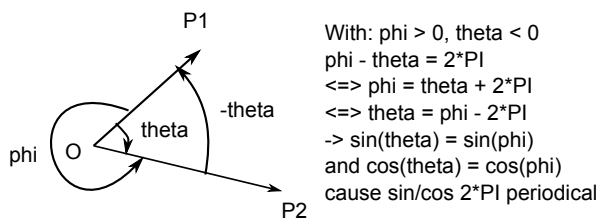


## getVector



```
function getVector(p1, p2)
{
    return [p2[0] - p1[0], p2[1] - p1[1]]
};
```

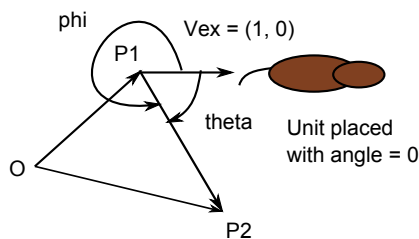
## getAngle



Not sure...

$V1 \cdot V2 = |V1| \cdot |V2| \cdot \cos(\phi)$   
 $\Leftrightarrow V1 \cdot V2 / (|V1| \cdot |V2|) = \cos(\phi)$   
 $\Leftrightarrow x1 \cdot y1 + x2 \cdot y2 / ((x1)^2 + (y1)^2 + (x2)^2 + (y2)^2)^{1/2} = \cos(\phi)$   
 $\Leftrightarrow \phi = \arccos(x1 \cdot y1 + x2 \cdot y2 / ((x1)^2 + (y1)^2 + (x2)^2 + (y2)^2)^{1/2})$   
 but that is ugly and isn't supported by libs...  
 With  $|V1 \cdot V2| / (|V1| \cdot |V2|) = |\sin(\phi)|$   
 and  $\tan(\phi) = \sin(\phi) / \cos(\phi)$   
 may be sufficient to do:  
 $\tan(\phi) = |V1 \cdot V2| / (|V1| \cdot |V2|) \cdot |V1| \cdot |V2| / (V1 \cdot V2)$   
 $\tan(\phi) = |V1 \cdot V2| / (V1 \cdot V2)$   
 $\Leftrightarrow \tan(\phi) = x1 \cdot y2 - x2 \cdot y1 / (x1 \cdot x2 + y1 \cdot y2)$   
 $\Leftrightarrow \phi = \arctan(x1 \cdot y2 - x2 \cdot y1 / (x1 \cdot x2 + y1 \cdot y2))$

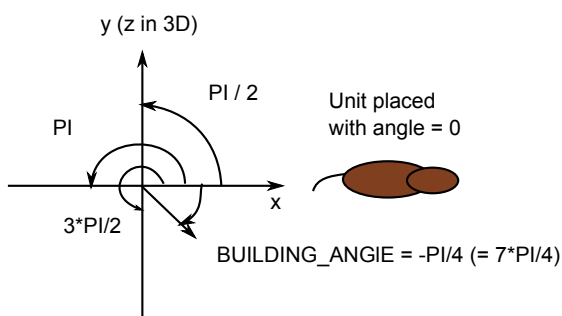
## getDirection



```
function getVector(p1, p2)
{
    return getAngle([1, 0], getVector(p1, p2))
};
```

## Unit placement

As it should be:



As it is now:

