**10D F=ma with Vectors**

1. A force of$ \left(3i+8j\right) N$ acts upon a particle of mass 0.5kg.
2. Find the acceleration of the particle in the form $\left(pi+qj\right) ms^{-2}$.
3. Find the magnitude and bearing of the acceleration of the particle
4. The following forces:

**F**1 = (2**i** + 4**j**) N

**F**2 = (-5**i** + 4**j**) N

**F**3 = (6**i** – 5**j**) N

all act on a particle of mass 3kg. Find the acceleration of the particle.

1. A boat is modelled as a particle of mass 60kg being acted on by 3 forces:

$$F\_{3}=\left(\begin{matrix}-75\\100\end{matrix}\right)N$$

$$F\_{2}=\left(\begin{matrix}10p\\20q\end{matrix}\right)N$$

$$F\_{1}=\left(\begin{matrix}80\\50\end{matrix}\right)N$$

Given that the boat is accelerating at a rate of $\left(\begin{matrix}0.8\\-1.5\end{matrix}\right) ms^{-2}$, find the values of $p$ and $q$

1. Given that:

**a** = 3**i** - **j**

**b** = **i** + **j**

Find µ if **a** + µ**b** is parallel to 3**i** + **j**