## <u>Circular motion – A2 Further Mathematics Mechanics</u>

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A particle, of mass  $5 \, \text{kg}$ , moves on a circular path so that at time t seconds it has position vector  $\mathbf{r}$  metres, where

$$\mathbf{r} = (2\sin 3t)\mathbf{i} + (2\cos 3t)\mathbf{j}$$

[4 mar	
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(b)	Prove that the magnitude of the resultant force on the particle is constant.	[3 marks]