**Worksheet –** Kinematics & Dynamics

The velocity of Princess Peach's 4 kg hang-glider is given by $\vec{v}=\left(4t\hat{x}+5t^{2}\hat{y}\right)\frac{m}{s}$ with the time (t) being in seconds as she elegantly soars above the Mushroom Kingdoms' go kart contestants below. (Peach herself having a negligible weight and mass due to being so fluttery in her large dress.)

At the instant the net force on her hang-glider has a magnitude of 43N, what is her acceleration?

 **(a)** Solve for the her acceleration in vector form.

 **(b)** Solve for the magnitude of her acceleration.