

3. [In this question,  $\mathbf{i}$  and  $\mathbf{j}$  are perpendicular unit vectors in a horizontal plane.]

A particle  $P$  is moving on a smooth horizontal surface under the action of two forces.

Given that

- the mass of  $P$  is 2 kg
- the two forces are  $(2\mathbf{i} + 4\mathbf{j})\text{ N}$  and  $(c\mathbf{i} - 2\mathbf{j})\text{ N}$ , where  $c$  is a constant
- the magnitude of the acceleration of  $P$  is  $\sqrt{5}\text{ m s}^{-2}$

find the two possible values of  $c$ .