Fill in the Blanks — Vector Forces and Acceleration

Force F_1	Force F_2	Force F_3	Resultant Force F (N)	Mass (kg)	Acceleration Vector (ms⁻²)	Acceleration Magnitude (ms⁻²)
$4i - j$	$4i + 2j$	$-2i - 9j$	$6i - 8j$	2 kg	$3i - 4j$	5
$-2i + \dfrac{7}{2}j$	$\dfrac{3}{2}i - 4j$	$2i - j$	$\dfrac{3}{2}i - \dfrac{3}{2}j$	0.5 kg	$3i - 3j$	$3\sqrt{2}$
$\begin{pmatrix} -15 \\ 0 \end{pmatrix}$	$\begin{pmatrix} 4 \\ 11 \end{pmatrix}$	$\begin{pmatrix} -25 \\ 4 \end{pmatrix}$	$\begin{pmatrix} -36 \\ 15 \end{pmatrix}$	3 kg	$\begin{pmatrix} -12 \\ 5 \end{pmatrix}$	13
$8i + \dfrac{1}{2}j$	$-11j$	$-2i + \dfrac{1}{2}j$	$6i - 10j$	4 kg	$\dfrac{3}{2}i - \dfrac{5}{2}j$	$\dfrac{1}{2}\sqrt{34}$
$\begin{pmatrix} -3 \\ 13 \end{pmatrix}$	$\begin{pmatrix} 1 \\ 3 \end{pmatrix}$	$\begin{pmatrix} -13 \\ 14 \end{pmatrix}$	$\begin{pmatrix} -15 \\ 30 \end{pmatrix}$	5 kg	$\begin{pmatrix} -3 \\ 6 \end{pmatrix}$	$3\sqrt{5}$
$-\sqrt{3}i$	$5\sqrt{3}i - 2j$	$-3\sqrt{3}i + 3j$	$\sqrt{3}i + j$	0.5 kg	$2\sqrt{3}i + 2j$	4
$\dfrac{7}{2}i + 2j$	$-\dfrac{5}{2}i - \dfrac{5}{2}j$	$-2i + 3j$	$-i + \dfrac{5}{2}j$	0.25 kg	$-4i + 10j$	$2\sqrt{29}$
$-2i + 7j$	$4i - 9j$	$4i - 10j$	$6i - 12j$	3 kg	$2i - 4j$	$\sqrt{20}$
$\begin{pmatrix} -3 \\ 5 \end{pmatrix}$	$\begin{pmatrix} 0 \\ -1 \end{pmatrix}$	$\begin{pmatrix} -3 \\ 8 \end{pmatrix}$	$\begin{pmatrix} -6 \\ 12 \end{pmatrix}$	6 kg	$\begin{pmatrix} -1 \\ 2 \end{pmatrix}$	$\sqrt{5}$
$\dfrac{2}{3}i - 2j$	$\dfrac{5}{3}i + \dfrac{1}{3}j$	$\dfrac{2}{3}i - \dfrac{4}{3}j$	$3i - 3j$	0.5 kg	$6i - 6j$	$6\sqrt{2}$