Each of the following free body diagrams represents a different problem. From the given data, solve for the missing quantities. Complete solutions for each problem should be shown (use a separate sheet if necessary).

1)\[ F_{\text{net}} = F_1 + F_2 = 20\text{N}[E] + 14\text{N}[W] \]
\[ F_{\text{net}} = 16\text{N}[E] \]
\[ a = \frac{F_{\text{net}}}{m} = \frac{16\text{N}[E]}{8\text{kg}} = 2\text{m/s}^2[E] \]

2)\[ F_{\text{net}} = F_1 + F_2 = 5\text{N}[E] + 15\text{N}[W] \]
\[ F_{\text{net}} = 10\text{N}[W] \]
\[ a = \frac{F_{\text{net}}}{m} = \frac{10\text{N}[W]}{2\text{kg}} = 5\text{m/s}^2[W] \]

3) Uniform motion (a = 0) do this [F = 0]
\[ F_{\text{net}} = 0 \text{ cuz } F_{\text{net}} = ma \]
\[ a = 0 \text{ cuz uniform motion} \]
\[ F = 10\text{N}[E] \]

4)\[ a = \text{zero} \]
\[ \text{type of motion = Uniform} \]
\[ F_{\text{net}} = 0 \]
\[ F = 20\text{N}[W] \]

5)\[ F_{\text{net}} = 4\text{N}[E] + 12\text{N}[W] \]
\[ F_{\text{net}} = 8\text{N}[W] \]
\[ a = \frac{F_{\text{net}}}{m} = \frac{8\text{N}[W]}{2\text{kg}} = 4\text{m/s}^2[W] \]

6)\[ F_{\text{net}} = 20\text{N}[E] + 18\text{N}[W] \]
\[ F_{\text{net}} = 2\text{N}[E] \]
\[ a = \frac{F_{\text{net}}}{m} = \frac{2\text{N}[E]}{2\text{kg}} = 1\text{m/s}^2[E] \]