Name $\qquad$ Period $\qquad$

## Force Problems - DRAW A PICTURE!

$\mathrm{F}=\mathrm{ma}$
$\mathrm{F}=\mathrm{mg}$
$\mathrm{g}=9.8 \mathrm{~m} / \mathrm{s}^{2}$
$\mathrm{N}=\mathrm{kg} \cdot \mathrm{m} / \mathrm{s}^{2}$

1. What is the mass of a dog that weighs $75-\mathrm{N}$ ?
2. An astronaut with all her equipment has a mass of $95-\mathrm{kg}$.
a. How much will she weigh on the Earth?
b. How much will she weigh on the moon where acceleration to gravity is $1.67-\mathrm{m} / \mathrm{s}^{2}$.
3. An object with a mass of $15-\mathrm{kg}$ is observed to accelerate at $3 \mathrm{~m} / \mathrm{s}^{2}$. What is the net force on the object?
4. A net force of $200-\mathrm{N}$ acts an object with a mass of $40-\mathrm{kg}$ on. What is the acceleration of the object?
5. An object is observed to accelerate at $14 \mathrm{~m} / \mathrm{s}^{2}$ while under the influence of $270-\mathrm{N}$ net force. What is the object's mass?
6. A net force of $150-\mathrm{N}$ acts upon an object with a mass of $25-\mathrm{kg}$ for a time period of 4 seconds. What is the acceleration acting on the object?
a. If the initial velocity of the object is $13-\mathrm{m} / \mathrm{s}$, what is the final velocity?
b. What is the distance traveled of the $25-\mathrm{kg}$ object?
