1. Pooky the feral cat is launched at $35^{\circ}$ and at a velocity of $20 \mathrm{~m} / \mathrm{s}$ from the top of a 12 m tall house.

How far away does Pooky land?
2. A WWII bomber is flying $125 \mathrm{~m} / \mathrm{s}$ at an altitude of 75 m , trying to keep below the Nazi radar. If the plane is flying horizontally, how far away from where it was dropped will its bombs land?
3. A ball is shot horizontally from the top of a 123 cm tall table. If it lands 1.47 m away, how fast was it shot?
4. A ball is shot $65 \mathrm{~m} / \mathrm{s}$ from a cannon set at an angle of $42^{\circ}$. The ball needs to hit a target on a wall. The target is 12 m up the wall. How far away should the wall be set?
5. Bolto the human cannonball is shot at an angle of $66^{\circ}$ and a velocity of $35 \mathrm{~m} / \mathrm{s}$. He wants to shoot thru a hoop at the top of his path. Where should that hoop be? (Both $x$ and $y$ positions, please.)
6. A ball is shot from the ground going $75 \mathrm{~m} / \mathrm{s}$ at $23^{\circ}$, what is its TOTAL velocity and direction 3.5 seconds into its flight?

