72. (a) The helicopter's speed is $v' = 6.2$ m/s. From the discussions in §4-9 we see that the speed of the package is $v_0 = 12 - v' = 5.8$ m/s, relative to the ground.

(b) Letting $+x$ be in the direction of $\vec{v}_0$ for the package and $+y$ be downward, we have (for the motion of the package)

$$\Delta x = v_0 t \quad \text{and} \quad \Delta y = \frac{1}{2}gt^2$$

where $\Delta y = 9.5$ m. From these, we find $t = 1.39$ s and $\Delta x = 8.08$ m for the package, while $\Delta x'$ (for the helicopter, which is moving in the opposite direction) is $-v' t = -8.63$ m. Thus, the horizontal separation between them is $8.08 - (-8.63) = 16.7$ m.

(c) The components of $\vec{v}$ at the moment of impact are $(v_x, v_y) = (5.8, 13.6)$ in SI units. The vertical component has been computed using Eq. 2-11. The angle (which is below horizontal) for this vector is $\tan^{-1}(13.6/5.8) = 67°$.