Graph Tom & Jerry's DISPLACEMENT vs Time and the intersection point where Tom would catch Jerry.

8. Tom the Cat is chasing Jerry the Mouse. Jerry the Mouse runs past Tom the cat at t = 0 with a constant velocity of 2 m/s. Tom then starts from rest and accelerates at a rate of 1.5 m/s^2. At what time will Tom catch Jerry? (Draw a diagram)

Then, make $d_{Tom} = d_{Jerry}$

$d_{jerry} = V_{jerry} * time$

$d_{Tom} = V_i * time + \frac{1}{2} a t^2$

For Tom: $V_i = 0$ m/s

$a = 1.5$ m/s^2

$d = ?$

Solve for : $t = ?$

IF a mouse hole is 9 meters away, will Jerry make it safely to the mouse hole?