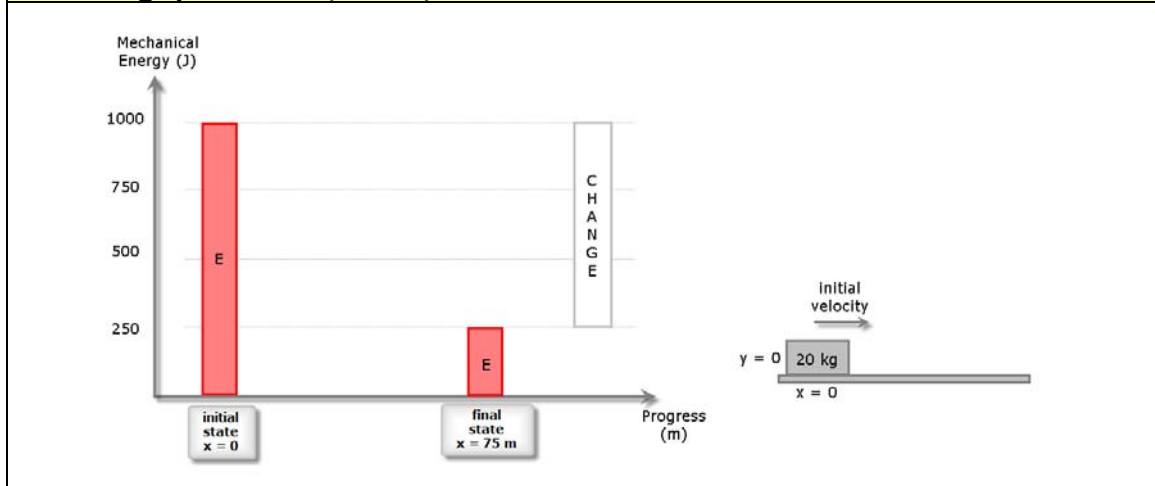


**Conceptual Test:
CONSERVATION OF MECHANICAL ENERGY**

The motion of a body is represented here as a mechanical energy vs. progress graph.

Try to understand the process described in that graphic and answer the following questions (below)



1 The change in kinetic energy between final and initial states is:

- $\Delta KE = 0$
- $\Delta KE > 0$
- $\Delta KE < 0$

2 The change in potential gravitational energy is

- $\Delta PE = 0$
- $\Delta PE > 0$
- $\Delta PE < 0$

3 The increase in mechanical energy is

- $\Delta E = 0$
- $\Delta E > 0$
- $\Delta E < 0$

4	The total work done is:
<ul style="list-style-type: none"> • $W_{TOTAL} = 0$ • $W_{TOTAL} > 0$ • $W_{TOTAL} < 0$ 	

5	The work $W_{F, ff}$ done (by non-conservative forces) is:
<ul style="list-style-type: none"> • $W_{F, ff} = 0$ • $W_{F, ff} > 0$ • $W_{F, ff} < 0$ 	

6	The block "change" represents:
<ul style="list-style-type: none"> • W_{TOTAL} • ΔPE • KE_{final} 	

7	The initial velocity is:
<ul style="list-style-type: none"> • 20 m/s • 10 m/s • 5 m/s 	

8	The body stops at
<ul style="list-style-type: none"> • $x = 75 \text{ m}$ • $x = 100 \text{ m}$ • $x = 150 \text{ m}$ 	

9	At $x = 25$ m the kinetic energy is
<ul style="list-style-type: none"><li data-bbox="284 255 512 293">• KE = 750 J<li data-bbox="284 322 512 360">• KE = 500 J<li data-bbox="284 389 512 427">• KE = 250 J	