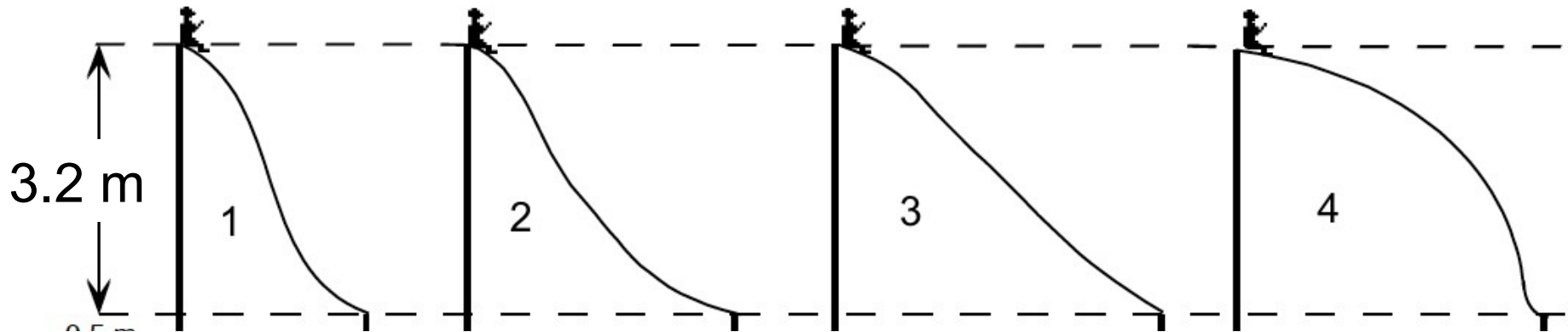
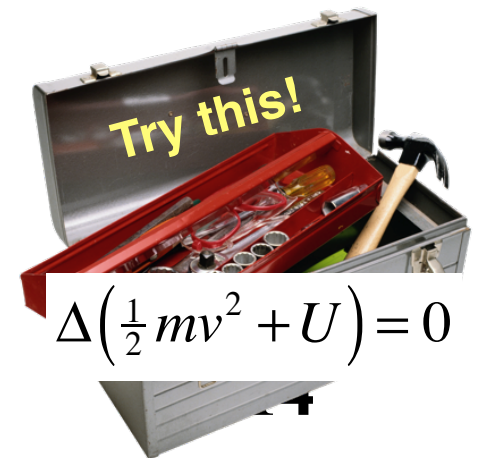


A young child wants to select one of the (frictionless) playground slides illustrated below to give her the **greatest possible speed** when she reaches the bottom of the slide. Which should she choose?



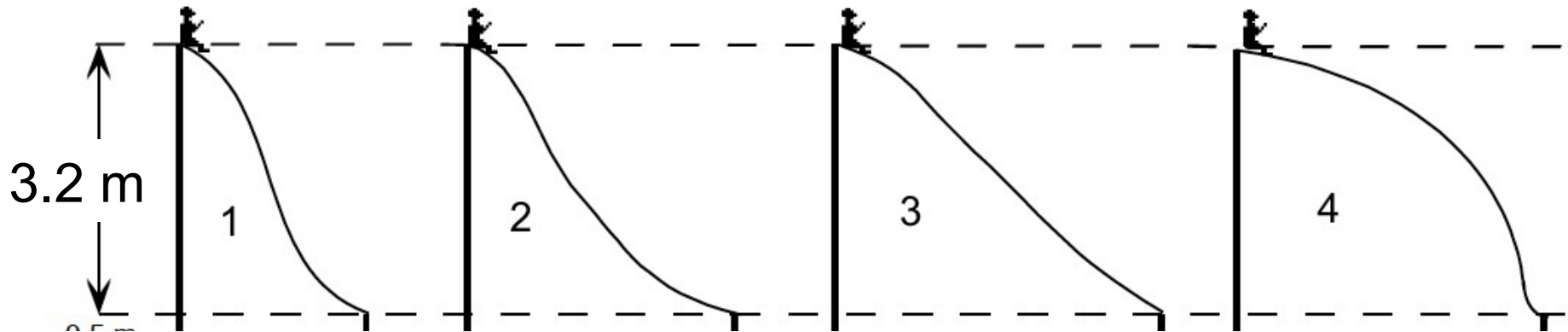
1. 1
2. 2
3. 3
4. 4

5. She should jump straight down
6. It doesn't matter. It would be the same for each.



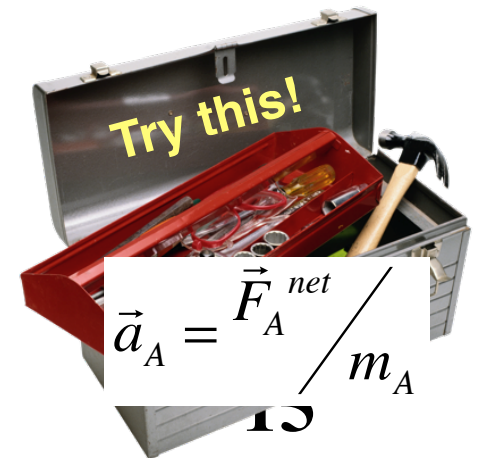
$$\Delta\left(\frac{1}{2}mv^2 + U\right) = 0$$

A young child wants to select one of the (frictionless) playground slides illustrated below to give her the **shortest possible time** when she reaches the bottom of the slide. Which should she choose?



1. 1
2. 2
3. 3
4. 4

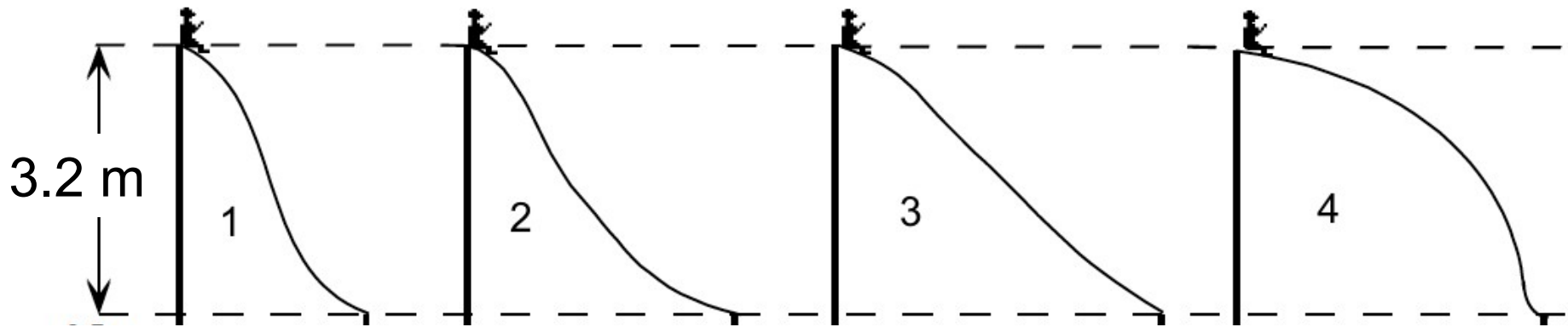
5. She should jump straight down
6. It doesn't matter. It would be the same for each.



$$\vec{a}_A = \frac{\vec{F}_A^{net}}{m_A}$$



If the child starts from rest at the top of the slide, calculate her speed at the bottom of the slide



1. 16 m/s
2. 32 m/s
3. 8 m/s
4. 4 m/s

5. We don't have enough information to answer.

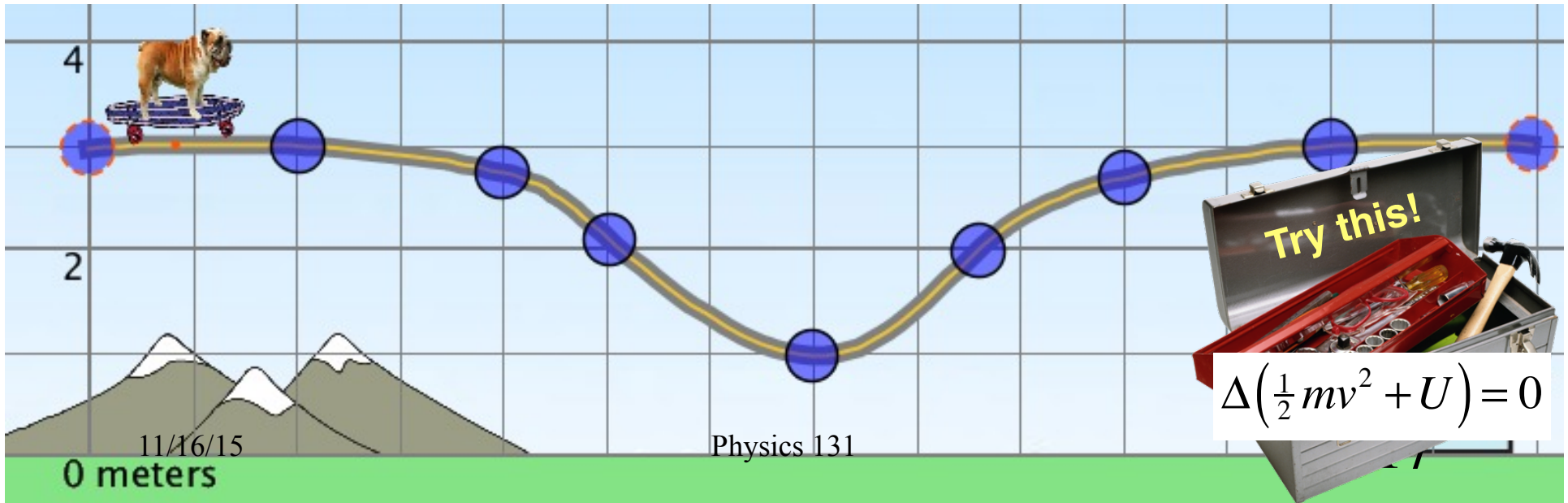


$$\Delta\left(\frac{1}{2}mv^2 + U\right) = 0$$

A bulldog on a skateboard is moving very slowly when he encounters a 2 m dip. How fast will he be going when he is at the bottom of the dip? The bulldog and skateboard combined have a mass of 20 kg. Friction and air drag can be ignored.



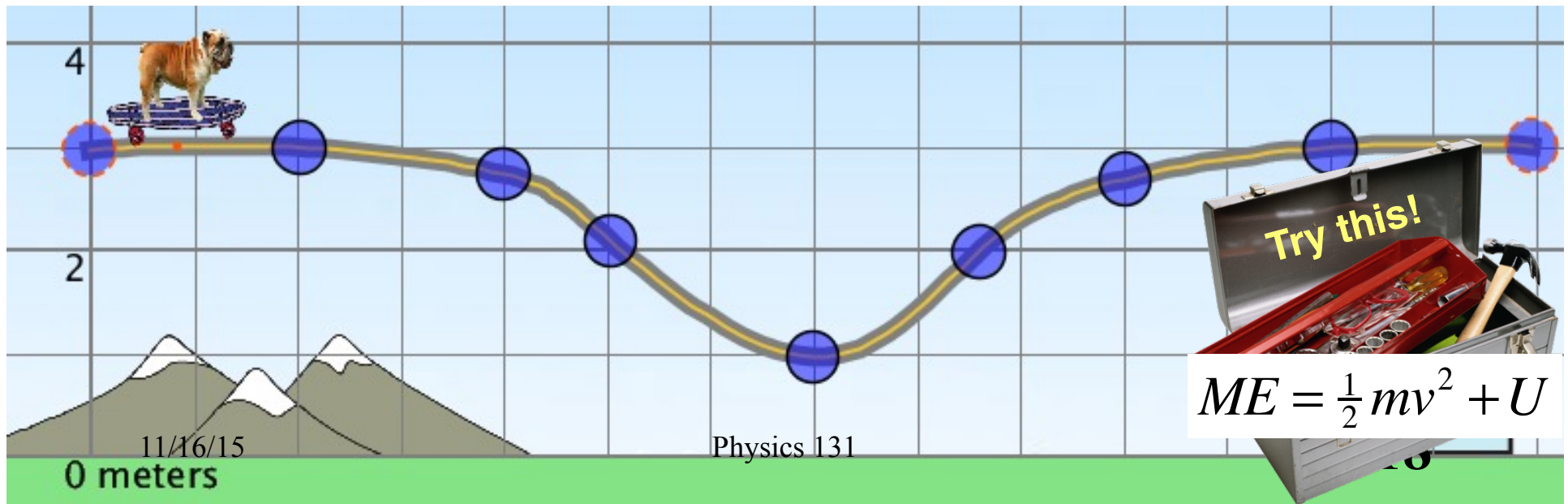
1. Very slowly
2. About 2 m/s
3. About 6 m/s
4. You can't tell from the information given.





A bulldog on a skateboard is moving very slowly when he encounters a 2 m dip. The bulldog and skateboard combined have a mass of 20 kg. What is their total mechanical energy?

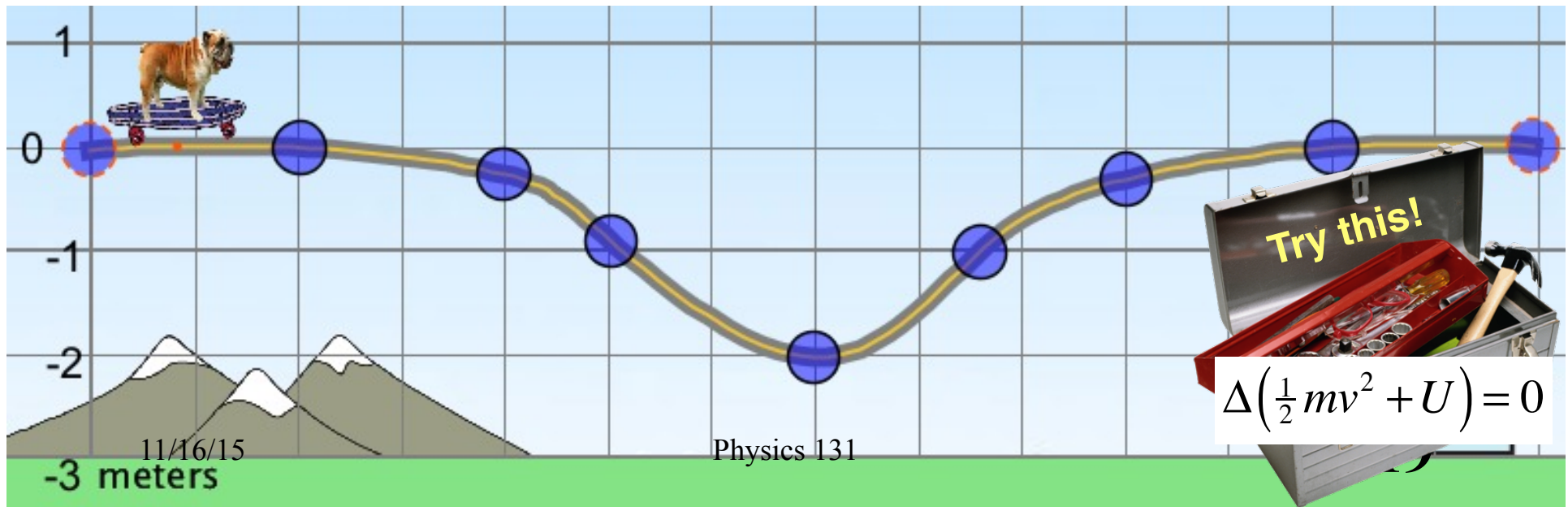
1. Almost zero
2. About 200 Joules
3. About 600 Joules
4. You can't tell from the information given.



A bulldog on a skateboard is moving very slowly when he encounters a 2 m dip. How fast will he be going when he is at the bottom of the dip? The bulldog and skateboard combined have a mass of 20 kg. Friction and air drag can be ignored.



1. Very slowly
2. About 2 m/s
3. About 6 m/s
4. You can't tell from the information given.





A bulldog on a skateboard is moving very slowly when he encounters a 2 m dip. The bulldog and skateboard combined have a mass of 20 kg. What is their total mechanical energy?

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