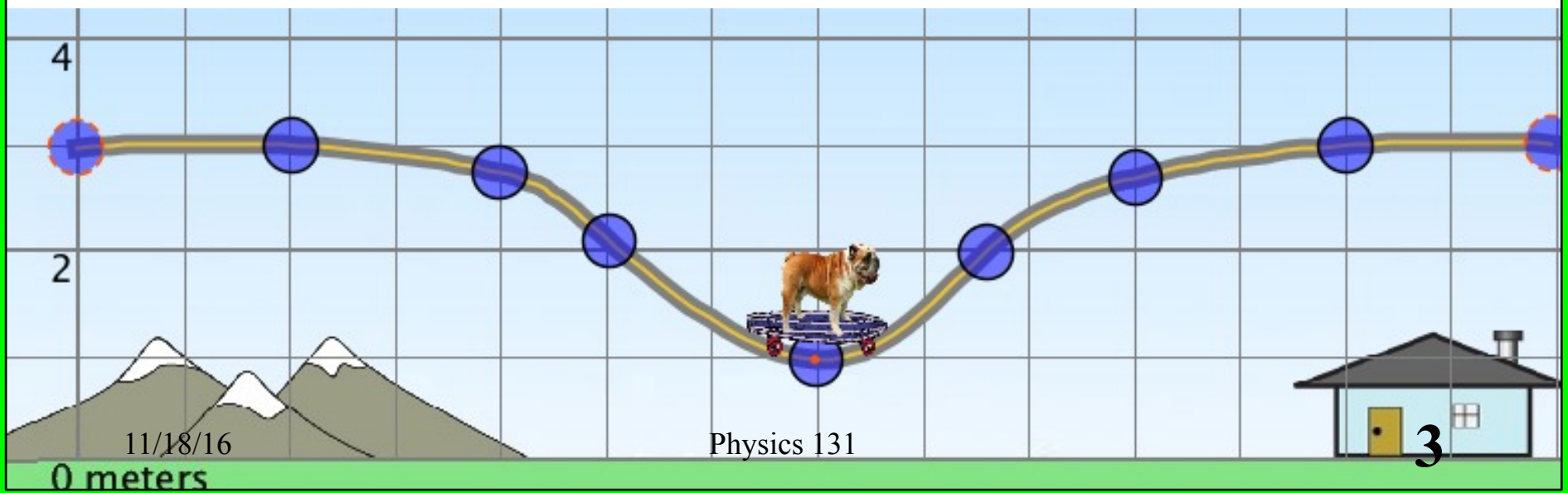


A bulldog on a skateboard is sitting at the bottom of a 2 m dip. What is their total mechanical energy? The bulldog and skateboard combined have a mass of 20 kg. Friction and air drag can be ignored. Note the scale.



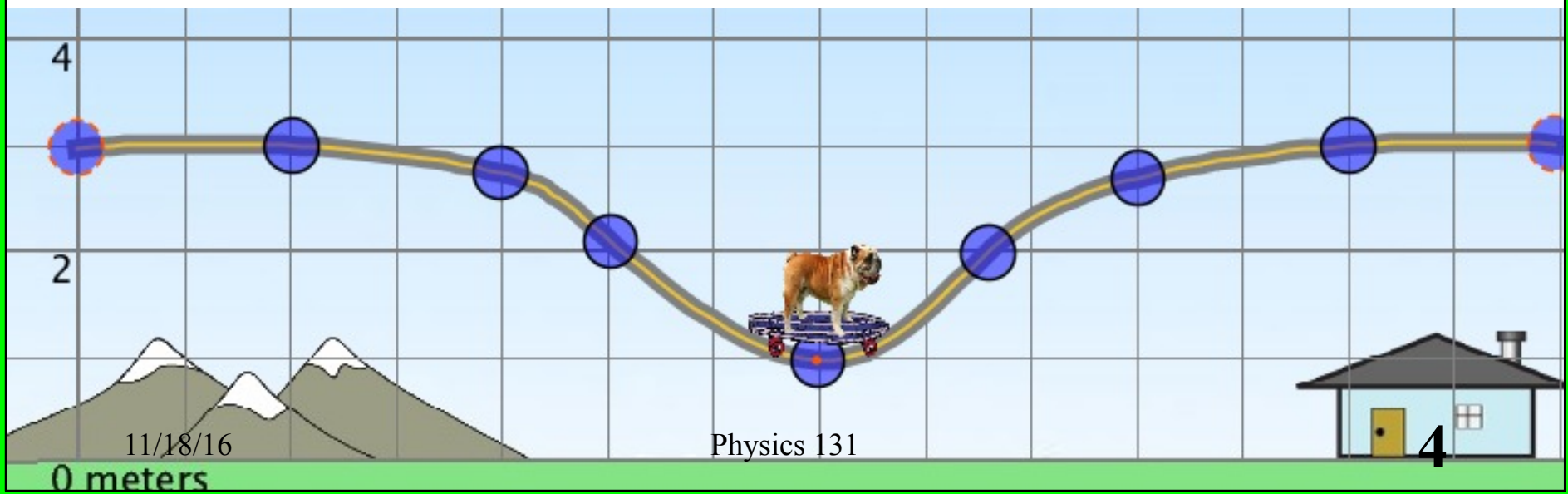
1. Zero
2. About 400 Joules
3. About 200 Joules
4. You can't tell from the information given.





A bulldog on a skateboard is sitting at the bottom of a 2 m dip. How much KE do you have to give them so they will roll out of the dip? The bulldog and skateboard combined have a mass of 20 kg. Friction and air drag can be ignored. Note the scale.

1. None
2. About 400 Joules
3. About 600 Joules
4. You can't tell from the information given.



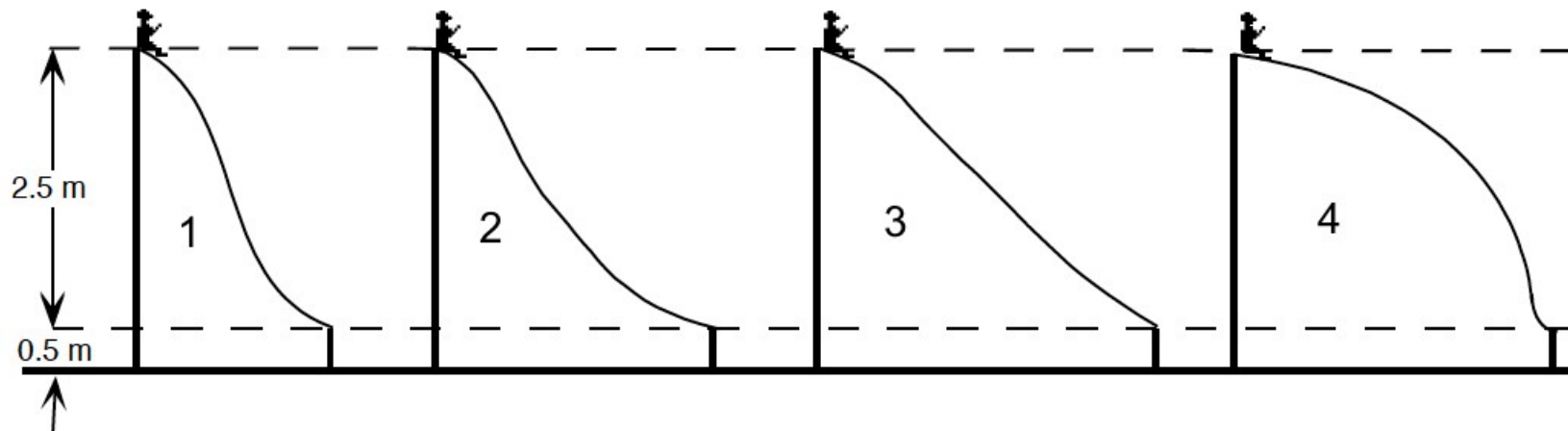


In question 3, one of the choices was that the total mechanical energy of the bulldog was negative. Is this possible?

- A. No. Total mechanical energy must be positive.
- B. No. Total mechanical energy could be negative, but not in this case.
- C. Yes. Because the potential energy can be negative.
- D. Yes. But only when the kinetic energy is zero.
- E. It cannot be determined for this example.



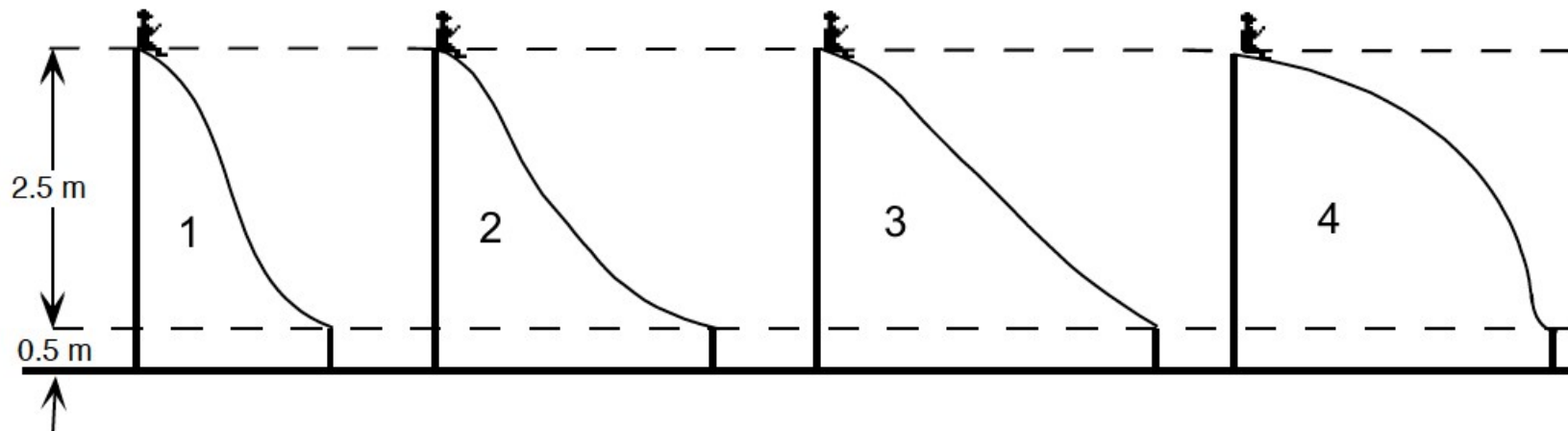
A young girl wants to select one of the (frictionless) playground slides illustrated below to give her the greatest possible speed when she reaches the bottom of the slide. Which should she choose?



5. It doesn't matter. It would be the same for each.



A young girl wants to select one of the (frictionless) playground slides illustrated below to reach the ground in the shortest possible time. Which should she choose?



5. It doesn't matter. It would be the same for each.



A spring-loaded toy dart gun is used to shoot a dart straight up in the air, and the dart reaches a maximum height of 24 m. The same dart is shot straight up a second time from the same gun, but this time the spring is compressed only half as far before firing. How far up does the dart go this time, neglecting friction and air resistance and assuming an ideal spring?

1. 96 m
2. 48 m
3. 24 m
4. 12 m
5. 6 m
6. 3 m
7. Something else

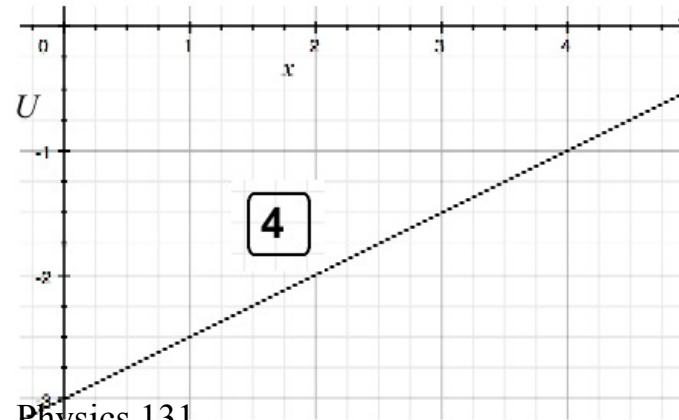
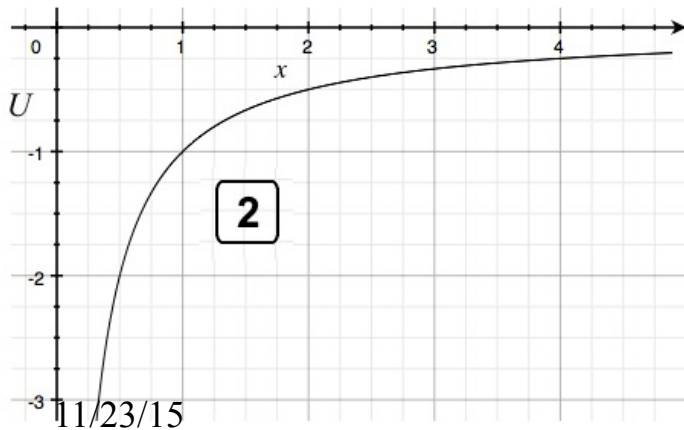
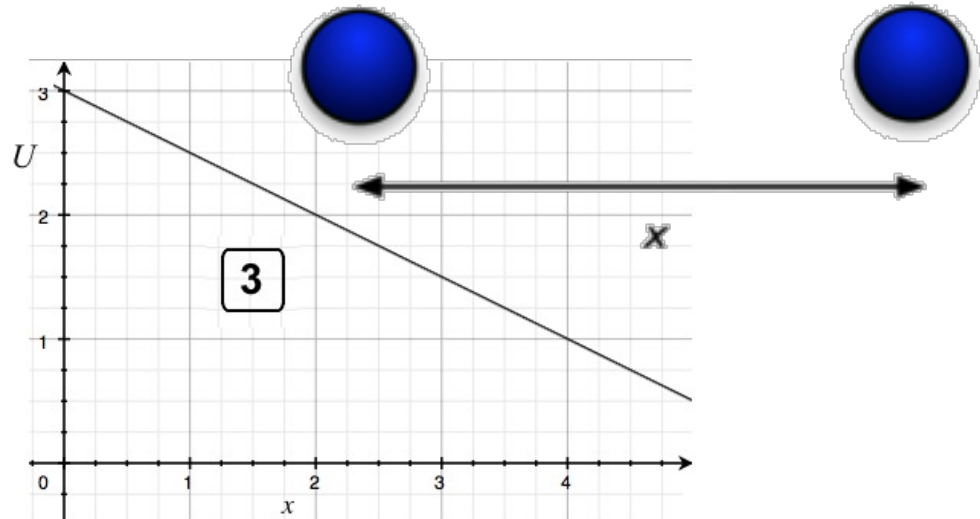
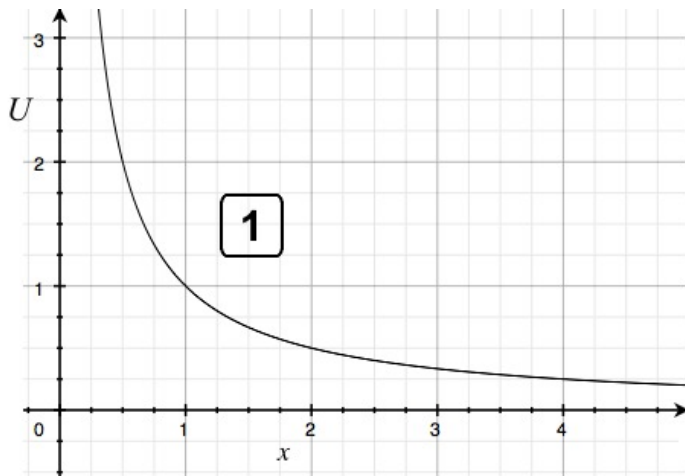
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Physics 131



18

What does the electric potential energy between two identical charges look like?

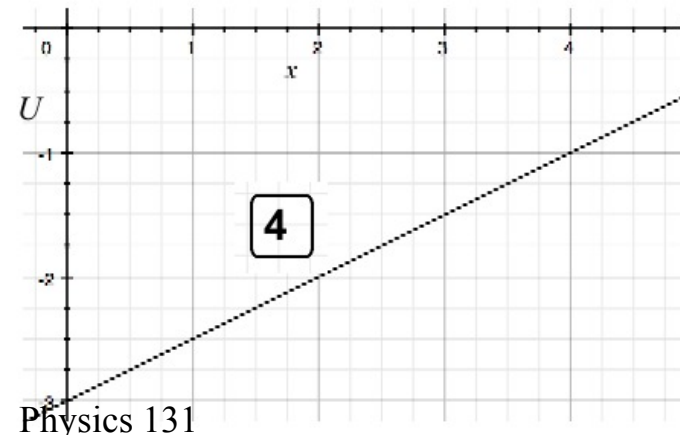
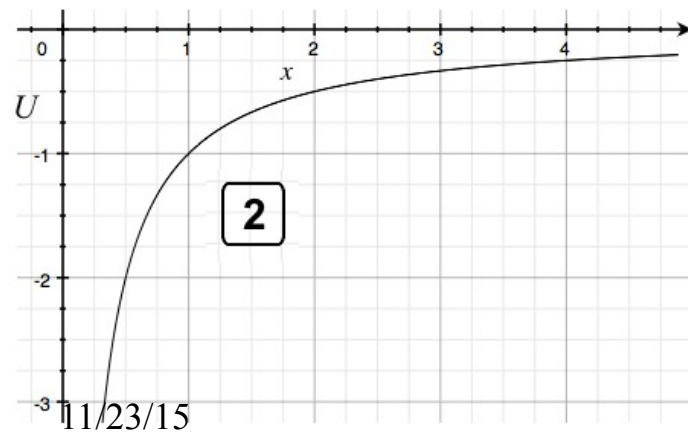
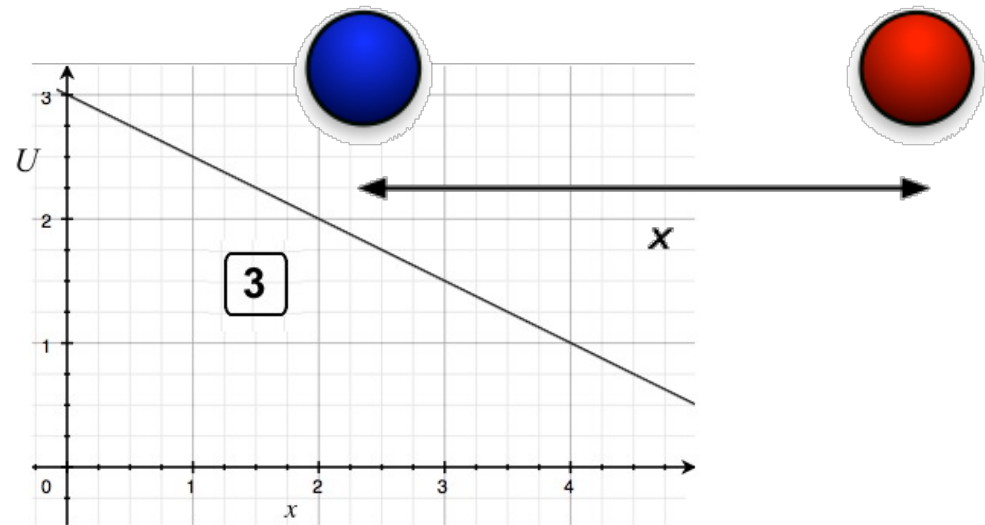
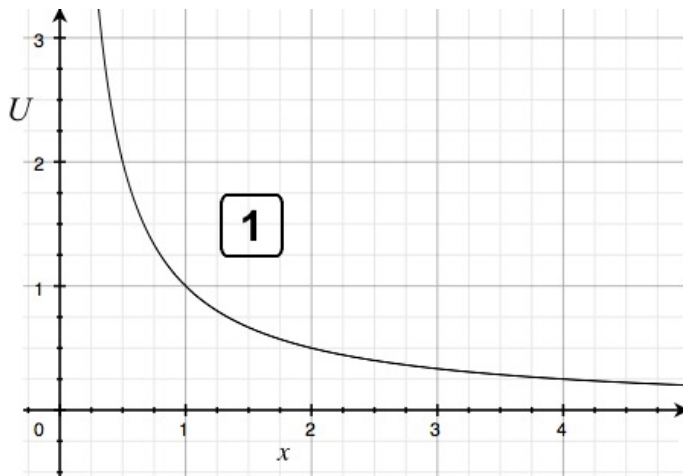


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5. None of the above

Physics 131

What does the electric potential energy between two opposite charges look like?



11/23/15

5. None of the above

Physics 131