NAME: ***DATE:*** ***LOCAL PHONE # :***

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For each question, indicate the *Confidence Level* of your response:

1 = not at all confident; I guessed
2 = not very confident
3 = reasonably confident
4 = very, very confident

---

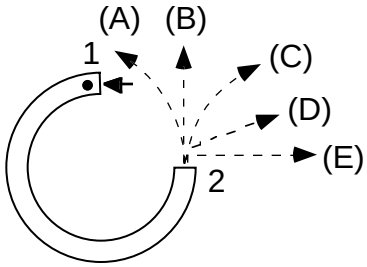
1. Two metal balls are the same size, but one weighs twice as much as the other. The balls are dropped from the top of a two-story building at the same instant of time. The time it takes for the balls to reach the ground below will be:

(A) about half as long for the heavier ball.
(B) about half as long for the lighter ball.
(C) about the same time for both balls.
(D) considerably less for the heavier ball, but not necessarily half as long.
(E) considerably less for the lighter ball, but not necessarily half as long.

CONFIDENCE LEVEL: (I guessed) 1 2 3 4 (very, very confident)

---

2. The accompanying diagram depicts a semicircular channel that has been securely attached, in a **horizontal plane**, to a table top. A ball enters the channel at "1" and exits at "2". Which of the path representations would most nearly correspond to the path of the ball as it exits the channel at "2" and rolls across the table top?



CONFIDENCE LEVEL:

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3. A book is at rest on a table top. Which of the following force(s) is(are) acting on the book? Circle all that apply.

1. A downward force due to gravity.
2. The upward force by the table.
3. A net downward force due to air pressure.
4. A net upward force due to air pressure.

(If <u>none</u> apply, please explain.)

CONFIDENCE LEVEL: (I guessed) 1 2 3 4 (very, very confident)

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4. Two equal-sized objects, one weighing 2 lbs and the other weighing 4 lbs, are released from rest from the roof of a two-story building. Which of the following statements is true?

(A) The force on the 4 lb object is about twice as large as the force on the 2 lb object, therefore, the 4 lb object reaches the ground in about half the time.
(B) The forces on the two objects are about equal, therefore, they both reach the ground at about the same time.
(C) The force on the 4 lb object is about twice as large as the force on the 2 lb object, but they both reach the ground at about the same time.
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(E) None of the above.

CONFIDENCE LEVEL: (I guessed) 1 2 3 4 (very, very confident)

The following information is requested in order to help us with our research. Your responses are important to us, and we appreciate your taking the time to provide us with this information. Rest assured that all responses will remain confidential.

Thank you in advance, The UMass Physics Education Research Group.

1. Course Number: _____ **4.** Session: Fall Spring

2. Major (or most likely major): _____ **5.** Gender: M F

3. Expected Graduation Date: _____ **6.** Best Days/Times to Call: _____

7. **Prior experience in physics:** Please list <u>every</u> physics course you have ever taken. (See examples, "Ex:".)

	PHYSICS COURSE	Duration	When?	School and Location	Instructor
Ex:	Physics (AP)	1 year	'92-'93	Hampton H.S., Boston, MA	Ms. Planck
Ex:	College Physics	1 semester	Fall '94	UMaine, Orono, ME	Dr. Einstein
(a)					
(b)					
(c)					
(d)					

8. **Knowledge of Physics:** How would you rate your current level of physics knowledge?

❑ None 0 ❑ Minimal 1 ❑ Fair 2 ❑ Good 3 ❑ Very Good 4 ❑ Excellent 5

NAME: ***DATE:*** ***LOCAL PHONE # :***

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CONFIDENCE LEVEL: (I guessed) 1 2 3 4 (very, very confident)

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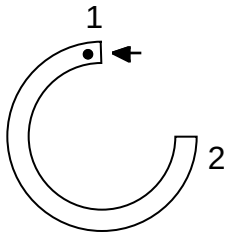
2. The accompanying diagram depicts a semicircular channel that has been securely attached, in a **horizontal plane**, to a table top. A ball enters the channel at "1" and exits at "2". On the diagram, draw the path of the ball as it exits the channel at "2" and rolls across the table top.



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(A) 1 only
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(C) 1, 2, and 3
(D) 1, 2, and 4
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4. Two equal-sized objects, one weighing 2 lbs and the other weighing 4 lbs, are released from rest from the roof of a two-story building. Which of the following statements is true?

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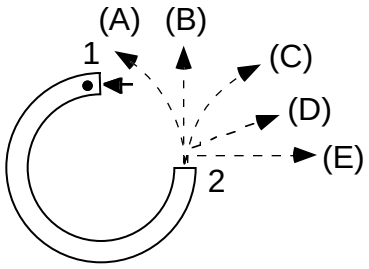

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3. A book is at rest on a table top. List the forces acting on the book, and indicate the direction of each.

Forces	Direction of each

(If there are **no** forces acting on the book, check this space. _____)

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4. Two equal-sized objects, one weighing 2 lbs and the other weighing 4 lbs, are released from rest from the roof of a two-story building. Which of the following statements is true?

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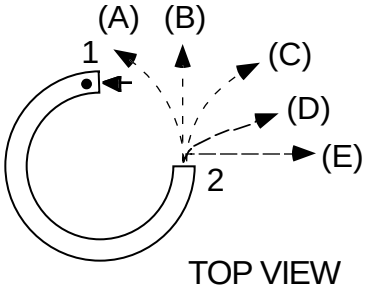

TOP VIEW
(as seen from above)

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