

potential energy vs kinetic energy

East.H.S. ©ALEMistry

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Name

Date

Come for assistance and cheerful encouragement after school Tues, Thurs, every day at lunch

ANSWERS

1. An object has energy if it can push a second object and make it move. Use your imagination to tell what could get pushed by each of these forms of energy.

| Object | Type of energy | How could it push something? (Be imaginative. There are no pre-determined "correct" answers.) |
|--------------------------------------|--|---|
| A book on a high shelf | <input checked="" type="checkbox"/> kinetic <input checked="" type="checkbox"/> potential | IF IT FALLS IT CAN PUSH DOWN SOMETHING IT LANDS ON. |
| steam from a kettle | <input checked="" type="checkbox"/> kinetic <input checked="" type="checkbox"/> potential | THE STEAM COULD TURN A LITTLE PINWHEEL |
| A little pile of gunpowder. | <input checked="" type="checkbox"/> kinetic <input checked="" type="checkbox"/> potential | A BULLET COULD BE PUSHED: YOU COULD SHOOT A BULLET. |
| Mercury expanding | <input checked="" type="checkbox"/> kinetic <input checked="" type="checkbox"/> potential | AN ANT SITTING ON THE MERCURY WOULD GET PUSHED UP |
| loud, loud sound from a trumpet | <input checked="" type="checkbox"/> kinetic <input checked="" type="checkbox"/> potential | OUR EARDRUM GETS PUSHED BY SOUND (AIR VIBRATING) |
| A book on the floor of our classroom | <input checked="" type="checkbox"/> kinetic <input checked="" type="checkbox"/> potential | Tough one! Can it fall any lower? |
| a Snickers™ bar with almonds | <input checked="" type="checkbox"/> kinetic <input checked="" type="checkbox"/> potential | Food energy is turned into muscle motion |
| Getting energy by eating candy | <input checked="" type="checkbox"/> kinetic <input checked="" type="checkbox"/> potential | " " " " " " " " |

2. Convert the following to normal numbers

$$6.878 \times 10^1 = 68.78$$

$$1.5449 \times 10^{-6} = 0.0000015449$$

$$3.6 \times 10^{-1} = 0.36$$

$$1.4806 \times 10^8 = 148060000$$

3. write the answer to the correct number of significant figures

$$(8.5 \times 10^6)(8.9 \times 10^3) = 7.565 \times 10^{10} \approx 7.6 \times 10^{10}$$

4. write the answer to the correct number of significant figures



$$\frac{4.3 \times 10^{-4}}{2.5 \times 10^{-6}} = 172 \approx 170 \text{ (two sig figs)}$$

5. Here's a fellow with a powerful rolling electrical sound system that makes the air vibrate with sound waves. Try to list a total of eight forms of energy in this system. Divide the energy that you list into Kinetic Energy and Potential Energy (hint: think in terms of electrical energy, heat, chemical energy, moving particles, light energy, etc)



| kinetic energy | potential energy |
|---------------------------------------|------------------|
| - turning wheels | - batteries |
| - sound (moving air) | - food he ate |
| - waving hand | - he is uphill |
| - pedel pushing | |
| - "the dance" of all vibrating matter | |

For each pair of quantities mark <, =, or >.

| | | | |
|----------|--|---|---|
| Example: | U.S. Deaths due to bicycle accidents | > | U.S. Deaths due to Ebola |
| 6. | The temperature of 300°C water | > | The temperature of 300K water |
| 7. | The mass of a 300 μg object | > | The mass of a 300 ng object |
| 8. | 6.878 x 10 ¹ | > | 9.4608 x 10 ⁻⁶ |
| 9. | The value of  | > | The value of  |

10. For the following sample data, is the value V/T growing, shrinking, or a constant value?

POSTPONED

| | |
|---|---|
| 11. For the following graph, what value did the student obtain for "absolute zero"? | 12. For the following graph, what value did the student obtain for "absolute zero"? |
| SKIP | POSTPONED |

Oct 28, 2014

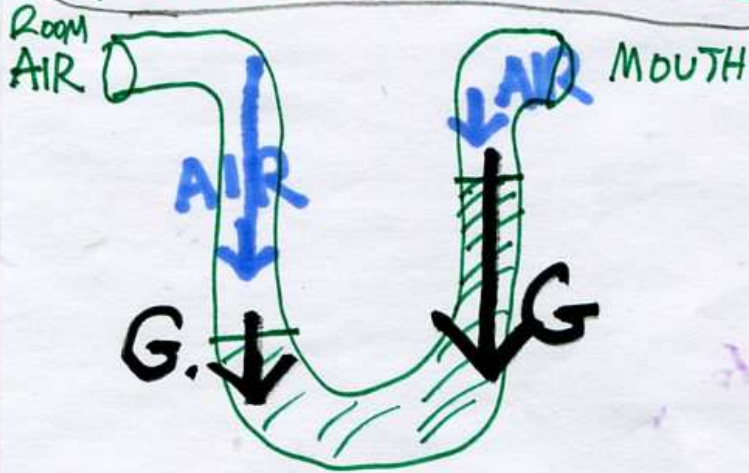
PURPOSE: How To TELL
WHAT'S PUSHING,
WHAT'S PULLING?

WARMUP SKETCH THE
TUBE AND STAND
ON MY DESK.

[AND TAKE OUT YOUR
DOG CHEF HOMEWORK]

#1

PLACE ARROWS FOR
PUSHING AND PULLING:



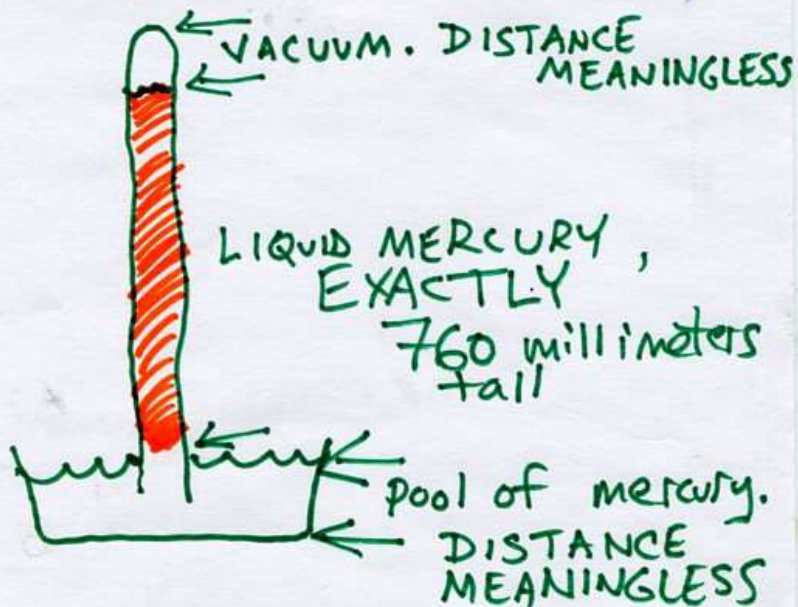
#2

GAS PARTICLES CAN
ONLY PUSH THEY
CAN NEVER PULL.

THEREFORE THERE
IS NO SUCH THING
AS 'SUCTION FORCE'

#3 A "BAROMETER" SHOULD
LOOK EXACTLY LIKE THIS

- IF:
- (A) the liquid is mercury,
 - (B) the location is sea level, and
 - (C) it's an average day, weather wise



#4 There are five possible pressure units. Memorize the names, not the numbers:

$$760. \text{ mmHg} = 760. \text{ torr}$$

$$760. \text{ mmHg} = 1.00 \text{ atmosphere}$$

$$760. \text{ mmHg} = 101.3 \text{ kilopascals}$$

$$760. \text{ mmHg} = 101300 \text{ pascals}$$

TONIGHT'S HOMEWORK.

JUST DO ^{the first}
7 through # 16