أسئلة مراجعة نهائية وفق الهيكل الوزاري منهج انسباير

موقع المناهج ⇦ المناهج الإماراتية ⇦ الصف الحادي عشر العام ⇦ فيزياء ⇦ الفصل الثاني ⇦ ملفات متنوعة ⇦ الملف

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المزيد من مادة فيزياء:	ملفات ا كتب للمعلم ا كتب للطالب ا اختبارات الكترونية ا اختبارات ا حلول ا عروض بوربوينت ا أوراق عمل منهج انجليزي ا ملخصات وتقارير ا مذكرات وبنوك ا الامتحان النهائي ا للمدرس
	إعداد: Zewin Adham

التواصل الاجتماعي بحسب الصف الحادي عشر العام

صفحة المناهج الإماراتية على فيسبوك					
المواد على تلغرام	التربية الاسلامية	اللغة العربية	اللغة الانجليزية	الرياضيات	

المزيد من الملفات بحسب الصف الحادي عشر العام والمادة فيزياء في الفصل الثاني

1	ورقة عمل عن درس الدفع و الزخم
2	أسئلة الامتحان النهائي الورقي بريدج
3	أسئلة الاختبار المركزي وفق الهيكل الوزاري
4	حل تجميعة أسئلة وفق الهيكل الوزاري بريدج
5	حل مراجعة نهائية وفق الهيكل الوزاري

G11- Gen – EOT2- revision

مراجعة الهيكل صف حادي عشر عام - انسير فيزياء

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Student Edition

مراجعة هيكل الفيزياء

حادي عشر عام – انسير

الفصل الثاني 2025

Mr. Adham Zewin

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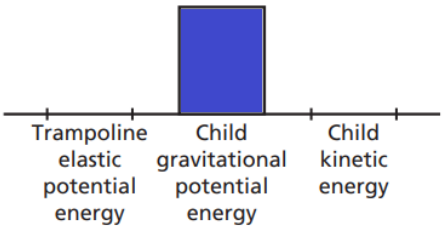
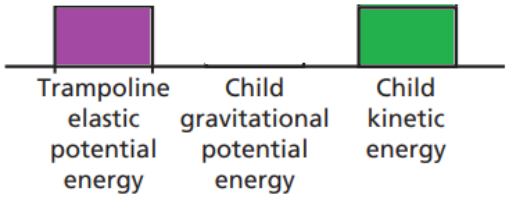
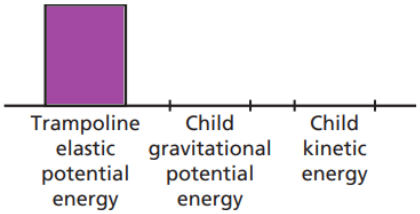
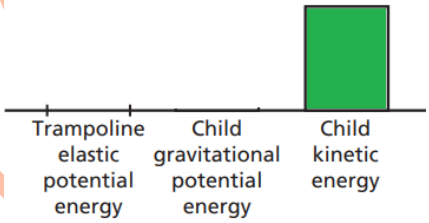
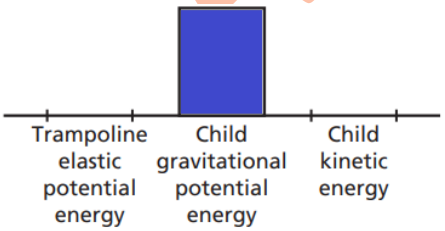
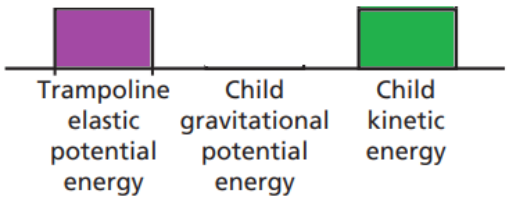
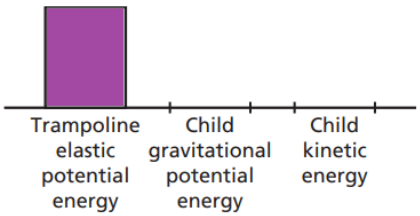
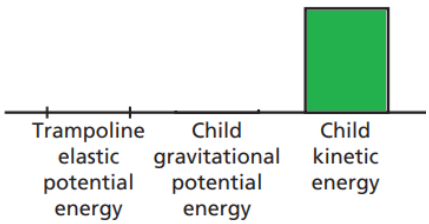
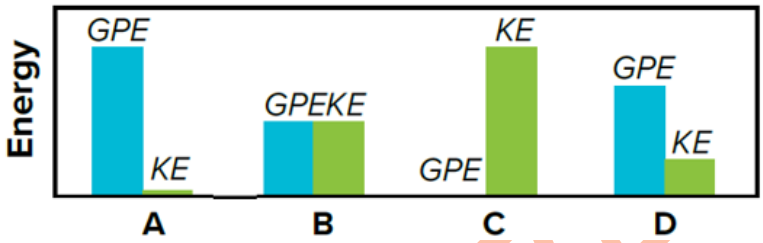
A child jumps on a trampoline. Which bar graphs to show the forms of energy present in the child is at the highest point?

A		**C**	
B		**D**	

A child jumps on a trampoline. Which bar graphs to show the forms of energy present in the child is at the lowest point?

A		**C**	
B		**D**	

A child jumps on a trampoline. Which energy bar diagrams show the forms of energy where the child is at the highest point.



what does the law of conservation of energy state?

A) Energy can be created and destroyed but not transformed.

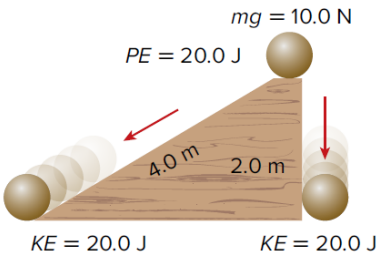
B) Energy can be transformed from one form to another but cannot be created or destroyed.

C) Energy is always lost as heat and cannot be converted into other forms.

D) Energy is only conserved in mechanical systems, not in thermodynamic processes.

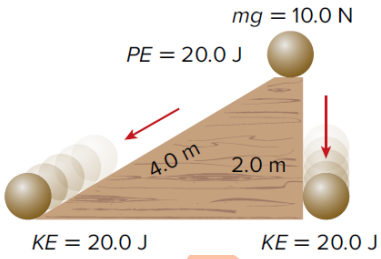
What happens to the potential energy of the ball when it moves down a vertical distance of 2.00 m?

a) Increases by 20.0 J
b) Decreases by 20.0 J
c) Remains constant
d) Increases by 10.0 J



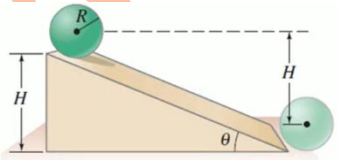
If friction is absent, what happens to the system's energy when the ball rolls down the ramp?

a) It increases
b) It decreases
c) It remains constant
d) It transforms into elastic energy



When the ball rolls down the ramp without friction, its kinetic energy is split into which components?

a) Gravitational and potential
b) Translational and rotational
c) Elastic and potential
d) Thermal and translational



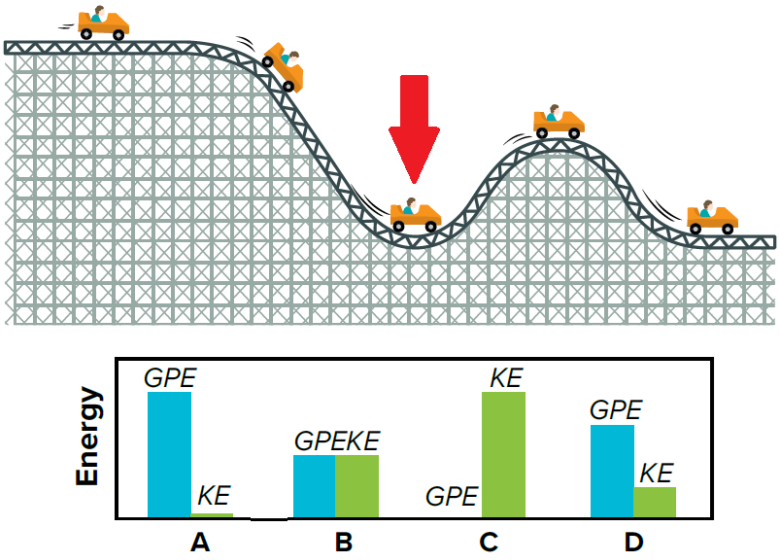
If friction transforms some of the energy in the system, what happens to the ball's final kinetic energy?

a) It increases
b) It decreases
c) It remains the same
d) It doubles

During a bounce, most of the ball's kinetic energy is converted to:

a) Rotational energy
b) Gravitational potential energy
c) Elastic potential energy
d) Heat energy

From the figure in the right **what the red arrow represent from the energy diagram?**



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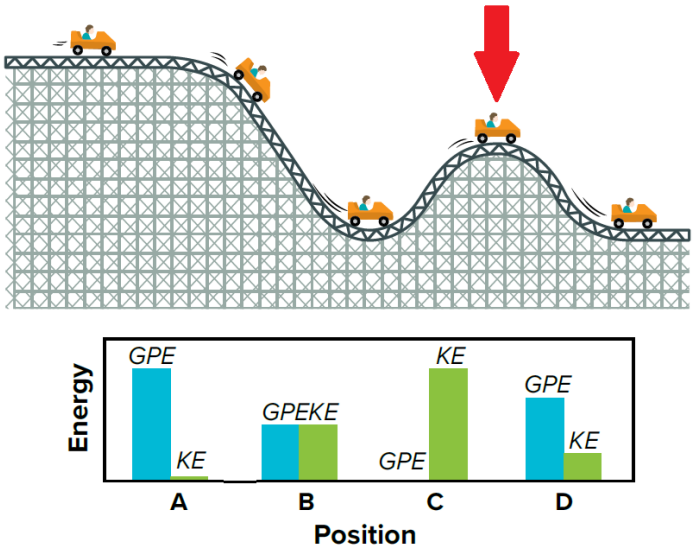


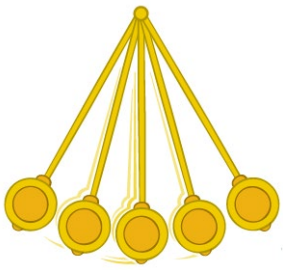
Where does some of the mechanical energy go when a pendulum swings and eventually stops?

a) Into the pendulum's mass

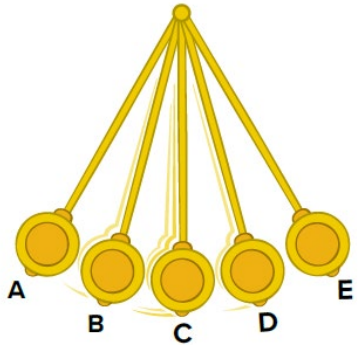
b) It disappears

c) It transforms into other forms of energy like heat or sound

d) It becomes gravitational energy



When a pendulum swings as the following which positions will have the highest potential energy?



A	A & C
B	B & D
C	B & E
D	A & E

the types of collisions

Type of Collision	Kinetic Energy (KE)	Momentum Conservation	Example
Elastic Collision	Conserved	Conserved	Steel balls or hard plastic collisions
Inelastic Collision	Decreases	Conserved	Clay or soft material collisions
Perfectly Inelastic Collision	Decreases	Conserved	Car crashes where vehicles stick
Superelastic Collision	Increases	Conserved	Explosive events or spring systems

In a closed and isolated system, which quantity is always conserved during a collision?

a) Kinetic energy
b) Potential energy
c) Momentum
d) Thermal energy

A collision where the kinetic energy remains the same before and after is called:

a) Inelastic collision
b) Elastic collision
c) Perfectly inelastic collision
d) Superelastic collision

In which type of collision do colliding objects stick together after impact?

a) Elastic collision
b) Perfectly inelastic collision
c) Superelastic collision
d) Explosive collision

---

4. What happens to kinetic energy in an inelastic collision?

a) It increases
b) It remains the same
c) It decreases
d) It disappears

What is a superelastic collision?

a) A collision where kinetic energy decreases
b) A collision where kinetic energy remains constant
c) A collision where kinetic energy increases
d) A collision where momentum is not conserved

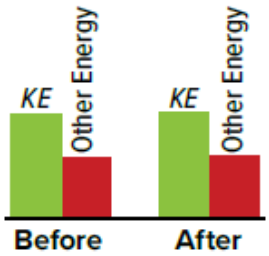
What bar diagram characteristic differentiates an elastic collision?

a) Kinetic energy bars are the same height before and after

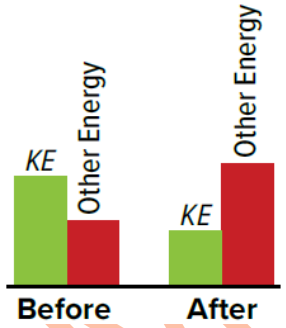
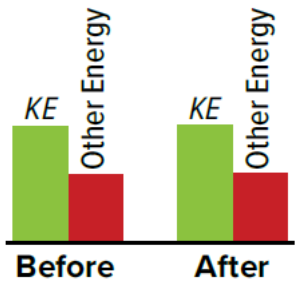
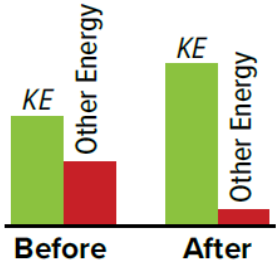
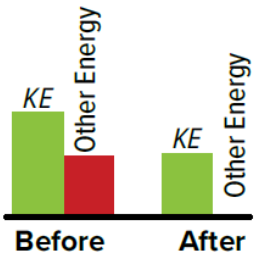
b) Momentum bars are taller after the collision

c) Thermal energy bars increase significantly

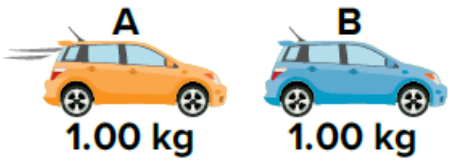
d) Potential energy bars disappear

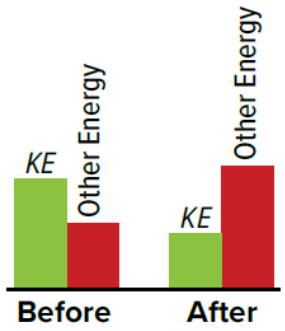
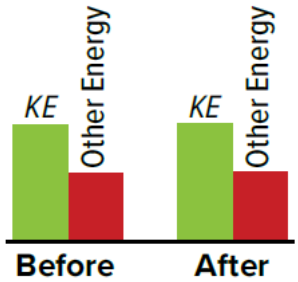
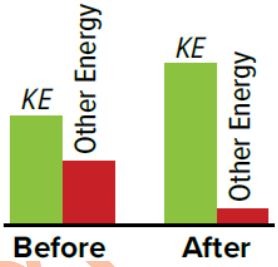
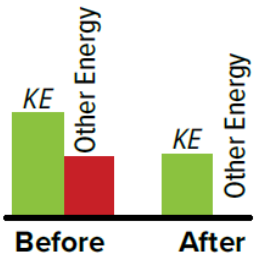


Which of the following energy diagrams represent an elastic collision between the two cars

A	B	C	D
			

Which of the following energy diagrams represent an Superelastic Collision between the two cars



A	B	C	D
			

How is heat best defined in terms of energy transfer?

A) Heat is the creation and destruction of thermal energy between objects.

B) Heat refers to the movement of thermal energy from a cooler object to a warmer one.

C) Heat is the spontaneous flow of thermal energy from a higher-temperature object to a lower-temperature one.

D) Heat is a measure of the total energy stored within an object, not its transfer.

What is the natural direction of heat transfer between two objects in contact?

A) From the object with lower temperature to the object with higher temperature.

B) Equally in both directions regardless of temperature difference.

C) Only when work is done, heat can flow from a warmer object to a cooler object.

D) From the object with higher temperature to the object with lower temperature.

When can heat transfer from a cooler object to a hotter object?

A) It happens naturally without any external influence.

B) Only when work is done on the system.

C) It never happens under any circumstances.

D) It happens in all thermodynamic processes.

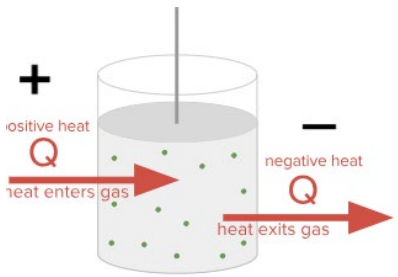
What does a positive Q (heat transfer) indicate in a thermodynamic system?

A) The object has lost thermal energy.

B) No heat transfer has occurred.

C) The object has absorbed thermal energy.

D) The object's temperature remains unchanged.



What type of heat transfer is primarily responsible for the motion of water in a boiling beaker?

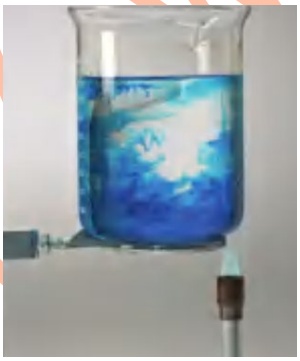
A) Conduction

B) Convection

C) Radiation

D) Evaporation

What type of heat transfer from the flame to the beaker?



A) Conduction

B) Radiation

C) Convection

D) Condensation

How does the Sun transfer heat to Earth across the vacuum of space?

A) Conduction

B) Convection

C) Radiation

D) Conduction and Convection

Heat distribution inside the oven is done by .....

A) Conduction

B) Radiation

C) Convection

D) Condensation

How is **radiation** different from **convection** as a method of heat transfer?

A) Radiation requires direct contact between objects, while convection does not.

B) Radiation does not require matter to transfer heat, while convection does.

C) Radiation involves the movement of liquids and gases, while convection transfers energy through solid objects.

D) Radiation is only effective over short distances, while convection can transfer heat over long distances.

What is the specific heat of a substance?

A) The total energy stored in a substance

B) The energy required to melt a solid

C) The amount of energy needed to raise the temperature of a unit mass by 1°C

D) The maximum energy a substance can absorb

Why does water take longer to heat up compared to metal?

A) Water has a lower density than metal

B) Water has a higher specific heat than metal

C) Water is a poor insulator

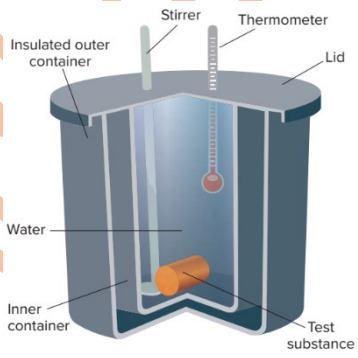
D) Metal expands when heated

What is the correct SI unit of **specific heat capacity**?

A) (J) B) (J/kg)

C) (J/kg·K) D) (kg·K /J)

How can a **simple calorimeter** be used to determine the **specific heat capacity** of a substance?



A) By heating the substance and measuring its highest possible temperature.

B) By mixing the hot substance with cold water and measuring the temperature change until thermal equilibrium is reached.

C) By cooling the substance and measuring how fast it loses heat to the surroundings.

D) By isolating the substance and measuring its internal temperature changes without interaction.

The atmospheric pressure at sea level is about 1.0 x 10^5 Pa. What is the force at sea level that air exerts on the top of a desk that is 152 cm long and 76 cm wide?

A) 1.2 × 10^5 N

B) 1.2 × 10^9 N

C) 4.8 × 10^5 N

D) 4.8 × 10^9 N

Extra problems

1. The atmospheric pressure at sea level is about 1.0 × 10^5 Pa. What is the force at sea level that air exerts on the top of a desk that is 152 cm long and 76 cm wide?

$$F = PA = Plw$$
$$= (1.0 \times 10^5\ \text{Pa})(1.52\ \text{m})(0.76\ \text{m}) = (1.0 \times 10^5\ \text{N/m}^2)(1.52\ \text{m})(0.76\ \text{m}) = 1.2 \times 10^5\ \text{N}$$

2. A car tire makes contact with the ground on a rectangular area of 12 cm by 18 cm. If the car's mass is 925 kg, what pressure does the car exert on the ground as it rests on all four tires?

$$P = \frac{F}{A} = \frac{F_{g,\,car}}{A} = \frac{mg}{4lw} = \frac{(925\ \text{kg})(9.8\ \text{N/kg})}{4(0.12\ \text{m})(0.18\ \text{m})} = 1.0 \times 10^5\ \text{N/m}^2 = 1.0 \times 10^5\ \text{Pa}$$

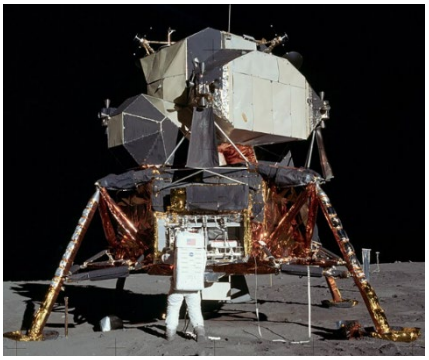
3. A lead brick, 5.0 cm × 10.0 cm × 20.0 cm, rests on the ground on its smallest face. Lead has a density of 11.8 g/cm³. What pressure does the brick exert on the ground?

$$P = \frac{F_{g,\,brick}}{A} = \frac{m_{g\,brick}\,g}{lw} = \frac{\rho V_g}{lw} = \frac{\rho lwhg}{lw} = \rho hg$$
$$= (11.8\ \text{g/cm}^3)(20.0\ \text{cm})(9.8\ \text{N/kg})\left(\frac{1\ \text{kg}}{1000\ \text{g}}\right)\left(\frac{(100\ \text{cm})^2}{(1\ \text{m})^2}\right) = 23\ \text{kPa}$$

If the lunar module weighed 12,000 N and rested on four pads, each with a diameter of 91 cm, what pressure did it exert on the Moon's surface?

$$A = \pi(0.455)^2 \approx 0.651\ \text{m}^2$$

$$A_{\text{total}} = 4 \times 0.651\ \text{m}^2$$



A) 2,500 Pa

B) 4,608 Pa

C) 7,200 Pa

D) 10,000 Pa

Which of the following statements is not true about pressure?

A) Pressure is a scalar quantity.

B) Pressure is measured in pascals (Pa).

C) Pressure is defined as force per unit area.

D) Pressure is a vector quantity.

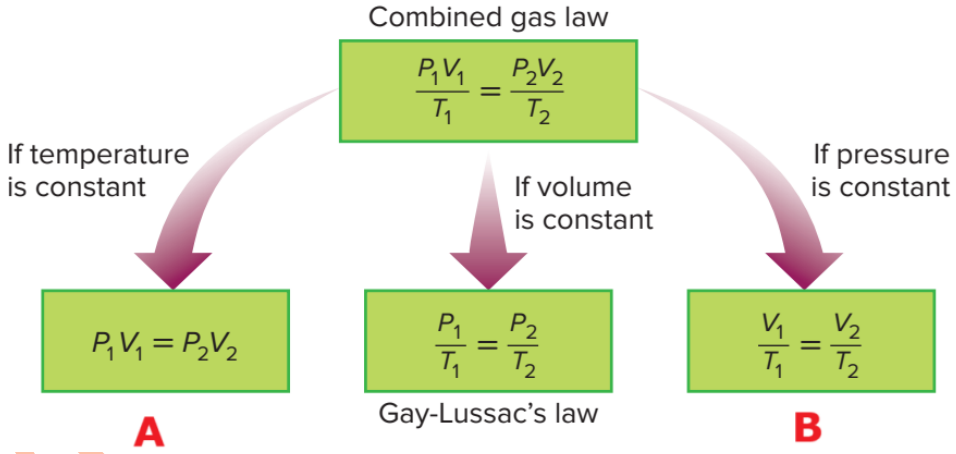
Which of the following statements is not true about absolute zero?

A) Absolute zero is the temperature at which all molecular motion ceases.

B) At absolute zero, a gas would theoretically have zero volume.

C) Absolute zero is −273 °C or 0 °K on the Kelvin scale.

D) Absolute zero can be reached practically in laboratory conditions.



A	B
Boyle's Law	**Ideal gas law**
Charles's Law	**Boyle's Law**
Boyle's Law	**Charles's Law**
Ideal gas law	**Charles's Law**

the ideal gas law equation PV = nRT , what does n represent?

A) Pressure in pascals

B) Volume in cubic meters

C) Number of moles of gas

D) Temperature in degrees Celsius

In the equation PV = nRT, which of the following is the correct unit for the universal gas constant R?

A) Joules per mole per Kelvin (J/mol·K)

B) Pascals per cubic meter (Pa/m^3)

C) Newtons per meter (N/m)

D) Kelvin per mole (K/mol)

Which of the following equations represents the pressure exerted by a fluid on a body?

A) $P = mg$

B) $P = \rho V g$

C) $P = \rho h g$

D) $P = \frac{F}{A}$

What happens to the pressure exerted by a fluid on a body if the density of the fluid increases?

A) The pressure decreases
B) The pressure remains the same
C) The pressure increases
D) The pressure becomes zero

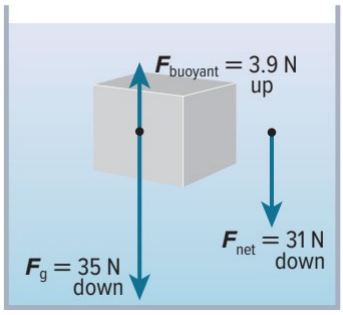
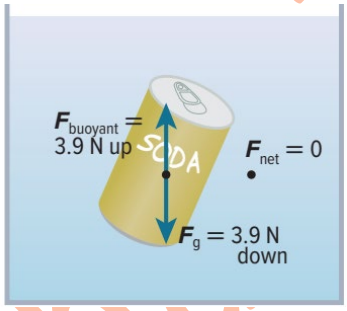
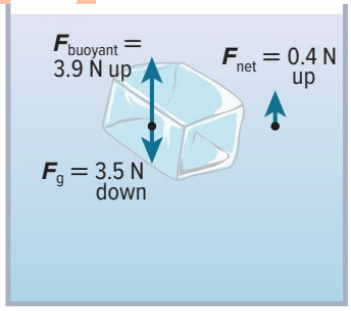
Which of the following is NOT a factor that affects the pressure of a fluid on a body?

A) Density of the fluid

B) Depth of the fluid

C) Acceleration due to gravity

D) Surface area of the body

I	II	III
		

Which object will float?

A) only I

B) only II

C) II & III

D) only III

Why does a steel block sink in water?

A) Because the buoyant force is greater than the weight of the block

B) Because the weight of the block is greater than the buoyant force

C) Because steel repels water

D) Because the density of water is greater than the density of steel

الأسئلة المقالية

child slides down a playground slide. At the bottom, she is moving at 3.0 m/s. How much energy was transformed by friction as she slid down the slide?

طفلة تنزلق على منزلق الملعب. عند القاع تتحرَّك الطفلة عند القاع بسرعة 3.0 m/s

Find the Potential energy ما مقدار طاقة الموضع؟

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Find the Final kinetic energy ما مقدار الطاقة الحركية النهائية؟

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How much energy was transformed by friction as she slid down the slide?

ما مقدار الطاقة التي تحوَّلت بفعل الاحتكاك أثناء انزلاقها على المنزلق؟

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When you turn on the hot water to wash dishes, the water pipes heat up. How much thermal energy is absorbed by a copper water pipe with a mass of 2.3 kg when its temperature is raised from 20.0°C to 80.0°C?

عند تشغيل الماء الساخن لغسل الأطباق، تسخن أنابيب المياه. ما مقدار الطاقة الحرارية التي يمتصها أنبوب ماء نحاسي كتلته 2.3 kg عندما ترتفع درجة حرارته من 20.0 درجة مئوية إلى 80.0 درجة مئوية؟

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A car engine's cooling system contains 20.0 L of water (1.00 L of water has a mass of 1.00 kg).

يحتوي نظام تبريد محرّك سيارة على 20.0 لترًا من الماء (1.00 لتر من الماء كتلته 1.00 kg) .

a. What is the change in the temperature of the water if 836.0 kJ of thermal energy is added?

a. ما التغيُّر في درجة حرارة الماء إذا أُضيف 836.0 kJ من الطاقة الحرارية؟

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b. Suppose that it is winter, and the car's cooling system is filled with methanol. The density of methanol is 0.80 g/cm^3 . What would be the increase in temperature of the methanol if it absorbed 836.0 kJ of thermal energy?

افترض أننا في فصل الشتاء، ونظام تبريد السيارة مملوء بالميثانول. كثافة الميثان 0.80 g/cm^3. كم ستكون الزيادة في درجة حرارة الميثانول إذا امتصَّ 836.0 kJ من الطاقة الحرارية؟

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c. Which coolant, water or methanol, would better remove thermal energy from a car's engine? Explain.

c. أيٌّ من سائل التبريد، الماء أم الميثانول، من الأفضل أن يزيل الطاقة الحرارية من محرّك السيارة؟ اشرح ذلك.

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A 2.00×10^2 g sample of water at 80.0°C is mixed with 2.00×10^2 g of water at 10.0°C in a calorimeter. What is the final temperature of the mixture?

خُلِطت عيِّنة مقدارها 2.00×10^2 g من الماء عند 80.0°C مع 2.00×10^2 g من الماء عند 10.0°C في مسعر. ما درجة الحرارة النهائية للخليط؟

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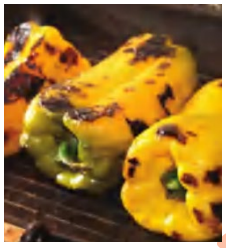
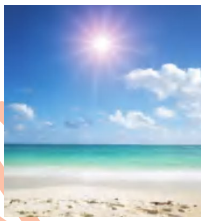
Complete the table using the following:

Conduction- Radiation – Convection – fastest – fast – slow - particle collisions – circulation - electromagnetic waves – Yes – No – Yes

			
Type	.....	.....	.....
Mechanism	.....	.....	.....
Medium Required	Solids (mostly), can also occur in liquids and gases but less effectively.	Fluids (liquids and gases).	No medium required (can occur in a vacuum).
Speed of Transfer	.....	.....	.....
Can Occur in a Vacuum?	.....	.....	.....

A tank of helium gas used to inflate toy balloons is at a pressure of 15.5×10^6 Pa and a temperature of 293 K. The tank's volume is 0.020 m^3 . How large a balloon would it fill at 1.00 atm and 323 K?

خزان من غاز الهليوم يُستخدَم في نفخ بالونات الألعاب عند ضغط 15.5×10^6 Pa ودرجة حرارة 293 K حجم الخزان 0.020 m^3. ما حجم البالون الذي يُمكِن ملؤه عند 1.00 atm ودرجة حرارة 323 K ؟

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Extra

A tank containing 200.0 L of hydrogen gas at 0.0°C is kept at 156 kPa. The temperature is raised to 95°C, and the volume is decreased to 175 L. What is the new pressure of the gas?

$$\frac{P_1V_1}{T_1} = \frac{P_2V_2}{T_2} \text{ with } T_1 = 273 \text{ K and } T_2 = 95°C + 273°C = 368 \text{ K}$$

$$P_2 = \frac{T_2P_1V_1}{V_2T_1} = \frac{(368 \text{ K})(156 \text{ kPa})(200.0 \text{ L})}{(175 \text{ L})(273 \text{ K})} = 2.40 \times 10^2 \text{ kPa}$$

أ/ أدهم زوين

Plastic foam is about 0.10 times as dense as water. What weight of bricks could you stack on a 1.0-m × 1.0-m × 0.10-m slab of foam so that the slab of foam floats in water and is barely submerged, leaving the bricks dry?

تبلغ كثافة الرغوة البلاستيكية حوالي 0.10 ضعف كثافة الماء. ما وزن الطوب الذي يمكنك تكديسه على لوح من الرغوة مساحته 1.0 م × 1.0 م × 0.10 م بحيث يطفو لوح الرغوة في الماء وبالكاد يغمره الماء تاركًا الطوب جافًا؟

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Extra

Common brick is about 1.8 times denser than water. What is the net force on a 0.20 m^3 block of bricks under water?

$$F_{net} = F_g - F_{buoyant} = \rho_{brick}Vg - \rho_{water}Vg = (\rho_{brick} - \rho_{water})Vg$$

$$= (1.8 - 1.0)\rho_{water}Vg = (1.8 - 1.0)(1.00 \times 10^3\ kg/m^3)(0.20\ m^3)(9.8\ N/kg) = 1.6 \times 10^3\ N$$

A girl is floating in a freshwater lake with her head just above the water. If she weighs 610 N, what is the volume of the submerged part of her body?

Because the girl is floating, she displaces a volume of water that weighs as much as she does.

$$F_g = F_{buoyant} = \rho_{water}Vg$$

$$V = \frac{F_g}{\rho_{water}g} = \frac{610\ N}{(1.00 \times 10^3\ kg/m^3)(9.8\ N/kg)} = 6.2 \times 10^{-2}\ m^3$$

What is the tension in a wire supporting a 1250-N camera submerged in water? The volume of the camera is 16.5×10^{-3} m^3.

To hold the camera in place, the tension in the wire must equal the net weight of the camera.

$$T = F_{net} = F_g - F_{buoyant} = F_g - \rho_{water}Vg$$

$$= 1250\ N - (1.00 \times 10^3\ kg/m^3)(16.5 \times 10^{-3}\ m^3)(9.8\ N/kg) = 1.09 \times 10^3\ N$$