

# PUZZLEVIEW PHYSICAL SCIENCE

## CHAPTER 7

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**How does the thickness of paint sprayed on a surface change when the sprayer is held twice as far away?** 10/10 How does the thickness of paint sprayed on a surface change when the sprayer is held twice as far away? The paint is  $\frac{1}{4}$  as thick, in accord with the inverse-square law.

**What does it mean to say that something moving in a curved path has a tangential velocity?** Tangential Velocity is the component of motion along the edge of the circular path that is also tangent to the circle. It is the linear rate at which an object is moving at any point along its circular path.

**What will happen if the necessary substances for a reaction are placed together but the activation energy is not available?** Particles must be able to get over the "bump"—the activation energy—if they are going to react. If the reactant particles collide with less than the activation energy, the particles will rebound (bounce off of each other), and no reaction will occur.

**Which of the following is never an evidence of chemical change?** Expert-Verified Answer Separation of particle is not evidence of chemical change. Therefore, option D is the correct answer.

**How does the brightness of light change when the source is held twice as far away?** The inverse square law shows that when light travels twice the distance its area grows four times as large and the brightness decreases by four times. The rate a light grows in area and decreases in brightness is related to the distance it travels from another point squared.

**What is the liquid that controls the thickness or the thickness of the paint?**

Explanation: The liquid that controls the thickness or thinness of the paint is called the Medium. It is added to the pigment and binder to dilute or adjust the consistency of the paint. The medium can also affect the drying time, texture, and finish of the paint.

**How to solve for tangential velocity?** For tangential velocity, we are describing the motion along the edge of a circle and the direction at any given point on the circle is always along the tangent line. As an equation, tangential velocity is: the distance,  $2\pi r$ , divided by the time,  $T$ .

**How does radius affect tangential velocity?** What happens to tangential velocity as the radius of an object increases provided the angular velocity remains the same? It increases because tangential velocity is directly proportional to the radius.

**What is the formula for tangential force?** The formula for tangential force is  $F = mAr$ , where  $m$  is the mass,  $A$  is the angular acceleration, and  $r$  is the radius of the circle.

**Is a catalyst endothermic or exothermic?** A catalyst can lower the activation energy required for the reaction to take place and allows the reaction to reach equilibrium faster, but as the catalyst is unchanged at the end of the reaction, the total energy absorbed or released during the reaction will be the same. Catalyst makes the reaction more exothermic.

**How does surface area affect the rate of a chemical reaction?** If the surface area of a reactant is increased: more particles are exposed to the other reactant. there is a greater chance of particles colliding, which leads to more successful collisions per second. the rate of reaction increases.

**Why higher temperatures tend to increase the rate of a chemical reaction?** Increasing the temperature increases the average speed of the reactant molecules. As more molecules move faster, the number of molecules moving fast enough to react increases, which results in faster formation of products.

**What happens to the total amount of mass during a chemical reaction?** The Law of Conservation of Mass dates from Antoine Lavoisier's 1789 discovery that

mass is neither created nor destroyed in chemical reactions. In other words, the mass of any one element at the beginning of a reaction will equal the mass of that element at the end of the reaction.

**What are the substances produced in a chemical reaction called?** Substances that start a chemical reaction are called reactants. Substances that are produced in the reaction are called products.

**Which is not a clue that could indicate a chemical change?** Evolution of gas, release of heat and change in smell can be observed during a chemical change. However, the shape of a substance is a physical property and any change in physical properties cannot be considered as an indicator of a chemical change.

**What is the inverse square law of irradiance?** Inverse square law  
Irradiance of electromagnetic radiation from a point source of radiation decreases with distance from the source and obeys the inverse square law.

**What is the inverse square law of radiation?** Inverse square law states that: “The intensity of the radiation is inversely proportional to the square of the distance”. “The intensity of the light to an observer from a source is inversely proportional to the square of the distance from the observer to the source”.

**What is the inverse square law of intensity?** The inverse square law states that for a point source of waves that is capable of radiating omnidirectionally and with no obstructions in the vicinity, the intensity  $I$  decreases with the square of the distance,  $d$ , from the source.

**What are the finely ground colored powders that form paint when mixed with a binder?** Pigments are inorganic or organic colorants that can be mixed with a binder to form paint. Pigments are typically finely ground particles that have unique physical properties such as color, size, shape, and translucency as well as chemical properties such as solubility, pH, and reactivity to temperature.

**In which colors are smartly put together?** Most of us learned about the color wheel back in elementary school and may recall the wisdom that complimentary colors—those situated opposite one another—look good together. Traditionally, these are red and green, yellow and purple, and orange and blue.

**What is the history of latex paint?** The term originated in the 1940s when a water-based paint with a Rubber binder was introduced. Later aqueous emulsions of other resins (such as acrylic, styrene-butadiene, Polyvinyl acetate, Polyurethane, Alkyd and Epoxy) replaced the natural rubber binder, while the latex name was retained.

**How does the force of gravity between two bodies change when the distance between them is halved?** Hence, when the distance between the objects is reduced to half, the gravitational force increases four times. Q.

**Why does the vertical component of velocity for a projectile change with time whereas the horizontal component of velocity doesn't change?** Answer and Explanation: As a result, the vertical motion is affected by the gravitational force. This force accelerates the projectile in motion. Since there is no horizontal forces are there, the horizontal motion is still unaffected. Therefore, vertical velocity changes with time but the horizontal velocity don't.

**When you stand at rest on the bathroom scale, how does your weight compare with the support force from the scale?** When you stand at rest on a bathroom scale, how does your weight compare with the support force from the scale? Your weight is equal in magnitude and opposite in direction to the support force from the scale.

**In what sense does the moon fall?** The moon falls in the sense that it keeps same distance from earth although it has tendency to fly away tangentialy. It does not fall because it moves in a circular orbit and centripetal force is provided by earth.

### **The Farther Shore: Star Trek: Voyager Homecoming 2 by Christie Golden**

**Q: What is "The Farther Shore"?** A: "The Farther Shore" is the second novel in the Star Trek: Voyager Homecoming series by Christie Golden. It follows the crew of the USS Voyager a year after their return to Earth from the Delta Quadrant.

**Q: What is the main plot of the novel?** A: The novel explores the challenges faced by the Voyager crew as they readjust to their lives on Earth. They encounter cultural shifts, personal struggles, and the haunting memories of their time in the Delta Quadrant. The novel also introduces a new threat that tests their resilience and forces them to confront their past.

**Q: What are the major themes of the book?** A: "The Farther Shore" explores themes of family, loss, and the resilience of the human spirit. It examines the impact of trauma and the challenges of readjusting to society after an extended period of isolation. The novel also explores the power of collective memory and the importance of reconciliation.

**Q: How does the novel fit into the Voyager canon?** A: "The Farther Shore" serves as a bridge between the events of Voyager's final episode, "Endgame," and the present day. It provides insights into the characters' lives after their return and explores the lingering effects of their journey in the Delta Quadrant. The novel also references previous events and characters from the series, enhancing the overall Voyager canon.

**Q: Who is the author, Christie Golden?** A: Christie Golden is a prolific author who has written several Star Trek novels and works in other genres, including fantasy and paranormal romance. She is known for her ability to delve into the characters' emotions and craft compelling narratives that explore the complexities of the Star Trek universe.

**What is the hardest CLEP exam?**

**Is there a study guide for CLEP exams?** The CLEP Official Study Guide (book) is the official study resource for all 34 CLEP exams. It includes practice questions for all exams, exam descriptions, and information on getting credit for CLEP as well as test-taking tips and strategies.

**How many questions are on information systems CLEP?** The CLEP Information Systems test contains 100 questions and has a time limit of 90 minutes. While the questions on the test do not emphasize hardware design and language-specific programming methods, they do cover concepts and techniques that are applicable to a variety of products.

**Is there a CLEP test for computer science?** Data Management and Programming Concepts This portion of the CLEP computer science exam contributes around 15% to the test's score. Test takers have to demonstrate they understand concepts of data management, types of data, management systems, and types of file

organization.

**Is 70 a good CLEP score?** Your raw score is then converted to a scaled score that ranges from 20 to 80, and this is the score that appears on your score report. The American Council on Education (ACE) recommends that colleges grant credit for a score of 50 or higher, but individual institutions can set their own CLEP credit policies.

**Is 50% a passing CLEP score?** Your score will range from 20 to 80, with the ACE-recommended passing score being 50. This is a scaled score, not a percentage score, meaning the Collegeboard has an internal scale for each exam determining how many questions you can get wrong and achieve a passing score.

**How to self study for CLEP?**

**Do CLEP exams look bad on transcript?** Fortunately most schools only list passing CLEP's.....so they all look pretty good to me. If your question is whether a CLEP present a different appearance than a grade earned sitting in a class room, yes they do.

**How long should I study for a CLEP test?** It's great to hear you're looking to tackle CLEP exams in addition to your AP classes! The optimal study time can vary depending on your prior knowledge and the subject matter of the exam. However, a general recommendation is to dedicate at least 4-6 weeks of study per CLEP exam.

**How many people pass CLEP exams?**

**How do I pass the CLEP exam?**

**Are CLEP exams only multiple-choice?** Types of CLEP Exams Exams are computer-based and take approximately 90 minutes to complete. They consist mainly of multiple-choice questions, but some exams, like College Composition and Spanish with Writing, include an essay section.

**What is the easiest CLEP exam to pass?** For example, College Composition Modular and Analyzing & Interpreting Literature both have reputations for being among the easiest CLEP exams, but non-native English speakers might find them difficult.

**Is calculator allowed in CLEP?** On CLEP exam day, test takers aren't allowed to bring their own calculators into the testing room. Because of this, calculators are integrated into the CLEP exam software to help test takers solve questions on some CLEP science and math exams and the Financial Accounting exam.

**Can you take CLEP exams for free?** CLEP exams are free for eligible military service members, spouses, and civil service employees. Some test centers may charge a test administrative fee in addition to the CLEP exam fee. However, DANTES-funded test takers can have the administrative fee waived when testing at fully funded and on-base test centers.

**Does CLEP affect GPA?** CLEP tests are pass/fail, so they do not add or subtract from your GPA.

**How many times can you take a CLEP exam?** There are no limits on how many times you can retake a CLEP test. Based on the 90-day retake waiting period, you could theoretically take the same CLEP subject test four times in a calendar year. Based on CLEP pass-rate data, some tests seem to have a higher success rate than others.

**Is the CLEP pass failing?** CLEP exams are not pass/fail. Instead, the score is based on the overall score that you received. On CLEP exams, you receive one (1) point for every correct answer. The American Council on Education, which recommends credit for CLEP exams, recommends a minimum CLEP score of 50 in order to be eligible for credit.

**How does CLEP show up on transcript?** What I've heard is all CLEPs are pass/fail and are not given a grade. Some colleges will only give credit though if you get above a certain score. Passing score is (normally) 50, highest is 80, and lowest is 20. Most DSSTs are graded though so just a head's Up!

**Can a CLEP test replace a grade?** Be sure to review your degree plan. Institutions may set a higher standard for CLEP credit earned in your major. Some schools will not accept CLEP credit for college-level courses you've already taken. A CLEP test also cannot replace a grade in a course you failed in the past.

**How quickly do you get CLEP scores?** Score Availability: Scores are displayed on your test screen immediately following the CLEP test. \* A paper copy of your score report is provided when testing at a test center.

**What is the highest CLEP score possible?** that ranges from 20, the lowest, to 80, the highest. This scaled score is the score that appears on your score report.

**Is the CLEP calculus exam hard?** The difficulty of the exam is generally considered to be about the same as a college-level introductory Calculus course, so prepare accordingly. I recommend reviewing any high school calculus materials you have, studying from CLEP prep books, and maybe even watching online tutorials for additional guidance.

**Are CLEP exams harder than AP?** CLEP vs AP Test Difficulty: Which is Harder? Data collected by Mounds View Schools shows that the CLEP and AP test are equivalent in their difficulty. What makes the difficulty different for some students is the way they are administered and the type of items that they included.

**Do CLEP exams look bad on transcript?** Fortunately most schools only list passing CLEP's.....so they all look pretty good to me. If your question is whether a CLEP present a different appearance than a grade earned sitting in a class room, yes they do.

## **Train Your Brain for Success: Read Smarter, Remember More**

Boosting your brainpower can unlock a world of potential, empowering you to excel in various aspects of life. If you're seeking to enhance your cognitive abilities, here are some strategies to help you train your brain for success.

### **1. Practice Active Reading**

Q: What does active reading involve? A: Active reading requires actively engaging with the material you're reading. This includes highlighting, annotating, taking notes, and questioning what you read.

### **2. Improve Memory with Spaced Repetition**



Q: How does spaced repetition aid memory retention? A: Spaced repetition is a technique where you review information at increasing intervals. This forces your brain to recall information actively, strengthening memories over time.

### **3. Exercise Your Brain with Puzzles and Games**

Q: How do puzzles and games benefit brain function? A: Puzzles and games provide mental stimulation and challenge various cognitive abilities, improving problem-solving, critical thinking, and memory.

### **4. Enhance Concentration Through Meditation**

Q: How does meditation promote concentration? A: Meditation helps calm the mind and reduce distractions. By practicing mindfulness and focusing on the present moment, you can improve your ability to concentrate and maintain focus.

### **5. Nurture Brain Health with Proper Nutrition**

Q: What role does nutrition play in brain??? A: A balanced diet rich in fruits, vegetables, lean proteins, and omega-3 fatty acids provides essential nutrients that support brain function, memory, and overall cognitive performance.

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