

David's Final Exam Discussion Question Solutions , Cosmology, Fall 2002

1. Explain the significance of every detail of the one dollar bill.

Take out a one dollar bill, and look at it. The one dollar bill you're looking at first came off the presses in 1957 in its present design. This so-called paper money is in fact a cotton and linen blend, with red and blue minute silk fibers running through it. It is actually material. We've all washed it without it falling apart. A special blend of ink is used, the contents we will never know. It is overprinted with symbols and then it is starched to make it water resistant and pressed to give it that nice crisp look.

If you look on the front of the bill, you will see the United States Treasury Seal. On the top you will see the scales for a balanced budget. In the center you have a carpenter's square, a tool used for an even cut. Underneath is the Key to the United States Treasury. That's all pretty easy to figure out, but what is on the back of that dollar bill is something we should all know.

If you turn the bill over, you will see two circles. Both circles, together, comprise the Great Seal of the United States. The First Continental Congress requested that Benjamin Franklin and a group of men come up with a Seal. It took them four years to accomplish this task and another two years to get it approved.

If you look at the left-hand circle, you will see a Pyramid. Notice the face is lighted, and the western side is dark. This country was just beginning. We had not begun to explore the West or decided what we could do for Western Civilization. The Pyramid is un-capped, again signifying that we were not even close to being finished. Inside the capstone you have the all-seeing eye, an ancient symbol for divinity. It was Franklin's belief that one man couldn't do it alone, but a group of men, with the help of God, could do anything.

"IN GOD WE TRUST" is on this currency. The Latin above the pyramid, ANNUIT COEPTIS, means, "God has favored our undertaking." The Latin below the pyramid, NOVUS ORDO SECLORUM, means, "a new order has begun." At the base of the pyramid is the Roman Numeral for 1776. If you look at the right-hand circle, and check it carefully, you will learn that it is on every National Cemetery in the United States. It is also on the Parade of Flags Walkway at the Bushnell, Florida National Cemetery, and is the centerpiece of most hero's monuments. Slightly modified, it is the seal of the President of the United States, and it is always visible whenever he speaks, yet very few people know what the symbols mean.

The Bald Eagle was selected as a symbol for victory for two reasons: First, he is not afraid of a storm; he is strong, and he is smart enough to soar above it. Secondly, he wears no material crown. We had just broken from the King of England. Also, notice the shield is unsupported. This country can now stand on its own. At the top of that shield you have a white bar signifying congress, a unifying factor. We were coming together as one nation. In the Eagle's beak you will read, "E PLURIBUS UNUM", meaning, "one nation from many people".

Above the Eagle, you have thirteen stars, representing the thirteen original colonies, and any clouds of misunderstanding rolling away. Again, we were coming together as one. Notice what the Eagle holds in his talons. He holds an olive branch and arrows. This country wants peace, but we will never be afraid to fight to preserve peace. The Eagle always wants to face the olive branch, but in time of war, his gaze turns toward the arrows. They say that the number 13 is an unlucky number. This is almost a worldwide belief. You will usually never see a room numbered 13, or any hotels or motels with a 13th floor. But think about this: 13 original colonies, 13 signers of the Declaration of Independence, 13 stripes on our flag, 13 steps on the Pyramid, 13 letters in the Latin above, 13 letters in "E Pluribus Unum", 13 stars above the Eagle, 13 bars on that shield, 13 leaves on the olive branch, 13 fruits, and if you look closely, 13 arrows. And, for minorities: the 13th Amendment.

2. Why is the sky blue?

Answer:

"I think the sky is blue because it's a shift from black through purple to blue, and it has to do with where the light is. You know, the farther we get into darkness, and there's a shifting of color of light into the blueness, and I think as you go farther and farther away from the reflected light we have from the sun or the light that's bouncing off this earth, uh, the darker it gets ... I think if you look at the color scale, you start at black, move it through purple, move it on out, it's the shifting of color. We mentioned before about the stars singing, and that's one of the effects of the shifting of colors."

- Pat Robertson, The 700 Club

3. Give examples of some useful conversions:

Answer:

Ratio of an igloo's circumference to its diameter: Eskimo Pi  
2000 pounds of Chinese soup: Won ton  
1 millionth of a mouthwash: 1 microscope  
Time to slip on a peel and smacking the pavement: 1 bananosecond  
Weight an evangelist carries with God: 1 billigram  
Time it takes to sail 220 yards at 1 nautical mile per hour: Knot-furlong  
365.25 days of dieting on low-cal cuisine: 1 lite year  
16.5 feet in the Twilight Zone: 1 Rod Serling  
Half of a large intestine: 1 semicolon  
1000 pains: 1 kiloahurtz  
Basic unit of laryngitis: 1 hoarsepower  
Shortest distance between two jokes: A straight line  
454 graham crackers: 1 pound cake  
1 million microphones: 1 megaphone  
1 million bicycles: 2 megacycles  
2000 mockingbirds: two kilomockingbirds  
10 cards: 1 decacards  
1 kilogram of falling figs: 1 Fig Newton  
1000 milliliters of wet socks: 1 literhosen  
1 millionth of a fish: 1 microfiche  
1 trillion pins: 1 terrapin  
10 rations: 1 decoration  
100 rations: 1 C-ration  
2 monograms: 1 diagram  
8 nickels: 2 paradigms  
2.4 statute miles of intravenous tubing at Yale Univ Hospital: 1 I.V. League  
100 Senators: Not 1 decision

4. Who would think I would post the answers to the final before the final?

Answer: You!

:)

P.S. Good luck on the REAL final! The REAL answers will be posted tomorrow afternoon.