

DPT News and Notes

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Special Offers for November 2018

If you refer someone who uses my services there is **always** a \$20 credit for you *but*

From now until November 21st the referral credit is increased to \$30!

Remember I work with middle school, high school and college students in math, physics, or chemistry.

Black Friday Sale:

On Friday 11/23 and Saturday 11/24 all sessions are \$40!

Take advantage of the time to catch up before that final push at the end of the term.

(Black Friday Sale may not be combined with any other offers, discounts, session totals, or credits and must be used on 11/23/18 or 11/24/18)

Study Time Tips

Through the years I've worked with a lot of people in different places in their studies. I can tell you that the biggest common obstacle to success is not ability. I have yet to meet someone who is bad at math. Many people think they are bad at math but it's not true. Really. **The biggest obstacle is not having enough time to study.** This includes realizing you will probably have to look back at earlier material (weeks/ months/ years) as well to use with the current material. So how can you make adjustments to your study time?

First: **Overestimate the time it will take.** It seems simple but many times we estimate "ok I'll leave an hour to study this." *The truth is you don't know how long it will take for a section because you've never*

studied that section. Keep in mind that the time that worked for one section may be way too short for another section! That hour can be gone in a flash and you may have a lot left to cover. So overestimate the time you'll need as *it will change from section to section.* If it goes faster great, but being on the short side creates havoc. I know it's easier said than done but this is a big one.

Second: **Redo your problems.** Many times people say to me "I looked at it but I didn't rewrite them." I know you've already completed the same problem but when you redo it you'll be surprised at the little details where you get stuck. *There is a huge difference between looking and writing.* The details make all the

difference. It's much better to get stuck during practice than on quizzes and exams.

Third: **If you're stuck or frustrated step away for a minute.** That doesn't mean check your phone or look online. It just means push back from the table, take a deep breath, and remember *you can do it.* So often a quick reset helps find the missing sign or factor of 2. Many times I've experienced the unseen reason of being stuck disappear after erasing a problem and starting fresh after a quick reset.

Just so you know, I learned all of these the hard way over many years. Take advantage of my experience.

Droppin' Some Knowledge

A student taking a class I was teaching when I was a graduate student said:

"Tim, if you can tell me why Superman can't see through lead I'll think you're a genius."

Without missing a beat I said:

"Oh, that's because the energy of an x-ray photon is the perfect amount to be absorbed by the electrons in the lead atom. It's true that the

electrons then emit other x-ray photons but now all those photons are emitted in random directions somewhere along a sphere so not enough of them are lined up in the same direction to have the intensity to pass through the lead anymore. "

Student: (*Stunned*) " You really are a genius."

Me: "Yup." (*Laughing*)

It was a funny moment that I was able to share with one of my students while at UCF. However, that redistribution is the actual reason we don't see x-rays pass through lead so to speak.



The Value of Flash Cards in Math or Physics

In our early math classes we're no stranger to flash cards. In our later history classes or general science classes we also use flash cards all the time. So why is it when it comes to upper level math and physics we forget about this valuable tool. The simple answer is that we need to learn how to do problems rather than memorize a step.

However, flashcards can still really help us. I've been talking to several students lately who

understand the concept but are having a hard time recalling details which is causing a problem.

You can use flash cards to memorize details that apply to many problems rather than one specific problem. *Flash cards help us remember details without doubt which helps so much on an exam.* Things like formulas, sign conventions, how conditions change quantities, derivatives, integrals, helpful sayings, unit circle, etc, etc. etc....

They help us learn when we create them. More importantly, we can use them quickly and easily to study when we only have a few minutes. This makes recalling the details second nature. Flash cards are also great to have when it comes to studying for finals after having covered so much material over 3 months.

I used them with great success in graduate school so I know they can help you.

"Flash cards help us remember details without doubt which helps so much on an exam."

Trivia

What does $12+30/(6-1) +1$ equal?

This is one of my favorite introductory physics questions: If I throw a ball straight up when it hits the highest point it's speed is 0 m/s. At the highest point is the acceleration up, 0m/s^2 , or down?

Answers: 19, down

Online Session Suggestions

- Make sure you have a strong internet connection. Wi-Fi is convenient but can be temperamental. Like a cell phone looking for service that includes the position and orientation of your computer. I use a hard cabled connection for every session to make sure I maximize my internet speed and stability.
- Use a computer. Other devices may limit your connection speed without you knowing it cutting a good connection down to well below 20M/sec.
- Take a picture and email me any material you want to cover during our session before our session. This might include homework, quizzes, tests, completed review sheets, if our stuff is going to have a lot of figures or long word problems this can help us make the most of our time.

Thank you for Choosing DPT to Help with your education!

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$\Sigma \vec{F} = m\vec{a}$

$N = N_0 e^{-kt}$

$\frac{d(3x^2)}{dx} = 6x$

$PV = nRT$

$n_1 \sin \theta_1 = n_2 \sin \theta_2$

A learning center for Math, Physics, and Chemistry