# April 2019 - HVAC & Refrigeration PE Exam RESULTS Survey

70 responses

## Company Name

70 responses

Anonymous

N/A

USACE

SS&A

AECOM

Prairie Engineering, P.C.

STV Inc

GA

HVAC

Acts 29 Consulting LLC

JE Dunn Construction

Henderson Engineers

Kemper Northwest

Sims Engineering

Air Force

EC

MSA Engineering

NYCT

MEP Design Firm

BM

Infinity MEP Consultants

Don Tran

Lockheed Martin

NA

MEP

BART

LEA

ACGI

Ly Ho

Jacobs Engineering Group

Cameron Engineering

N/a

Skidmore, Owings and Merrill

Arup

ME Engineers

Domani Inspections

Resolute Building Intelligence

Readywindows

AOS Engineering

Huitt-Zollars

El Paso Water

Oscar L. Estante

none

Gradient Consulting

Interface Engineering

WSP

Metropolitan Mechanical Contractors

Avangrid

-

SD

Lp

Salas O'Brien

ACR Eng

Maine

Self

DXS

Schneider Electric

This is a required question

University of Washington

Staggs & Fisher Consulting Engineers

Arora Engineers, Inc.

Urban Green Council

Ernesto L Gonzalez

LPA Inc.

Performance Commissioning

jeffrie deno

Burns & McDonnell

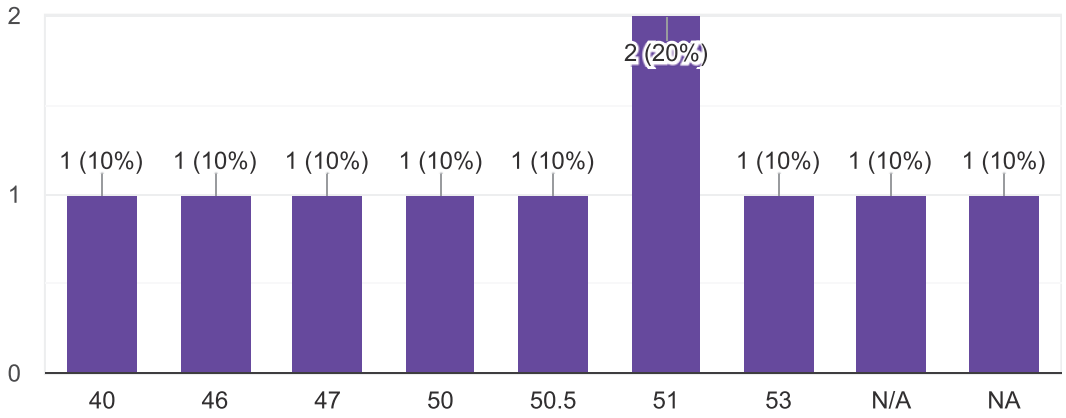
Grant

## Did you pass the PE exam?

70 responses

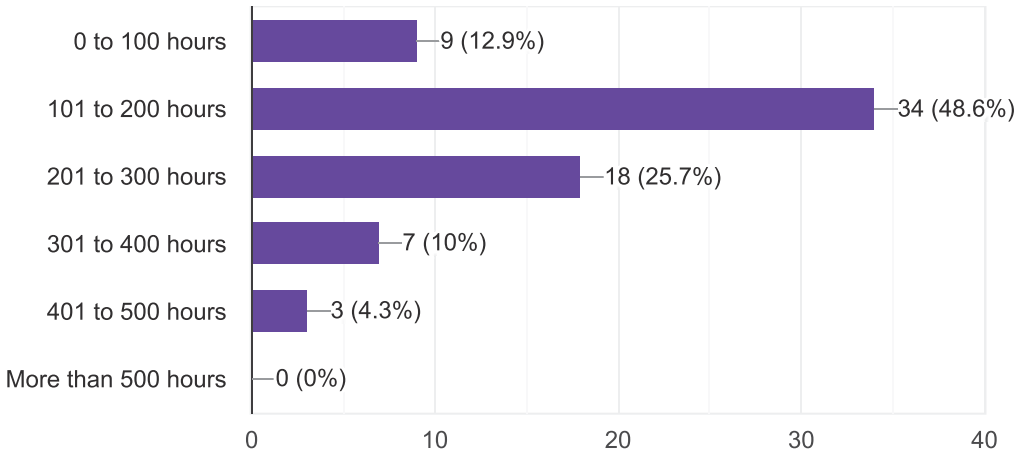

## If you did not pass the exam, then what was your score out of 80? (_____ / 80)

10 responses



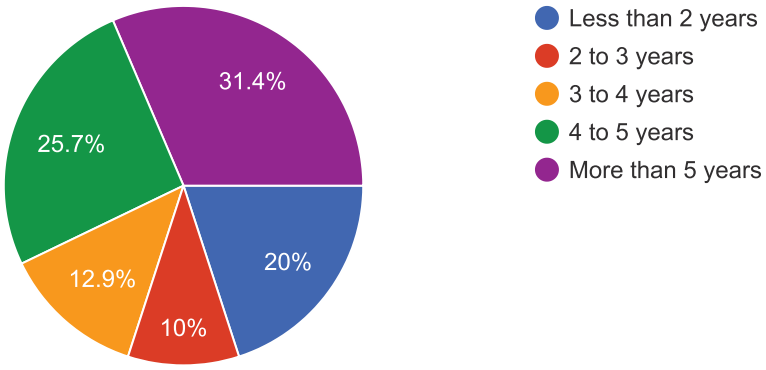

## How many hours did you study for the exam?

70 responses



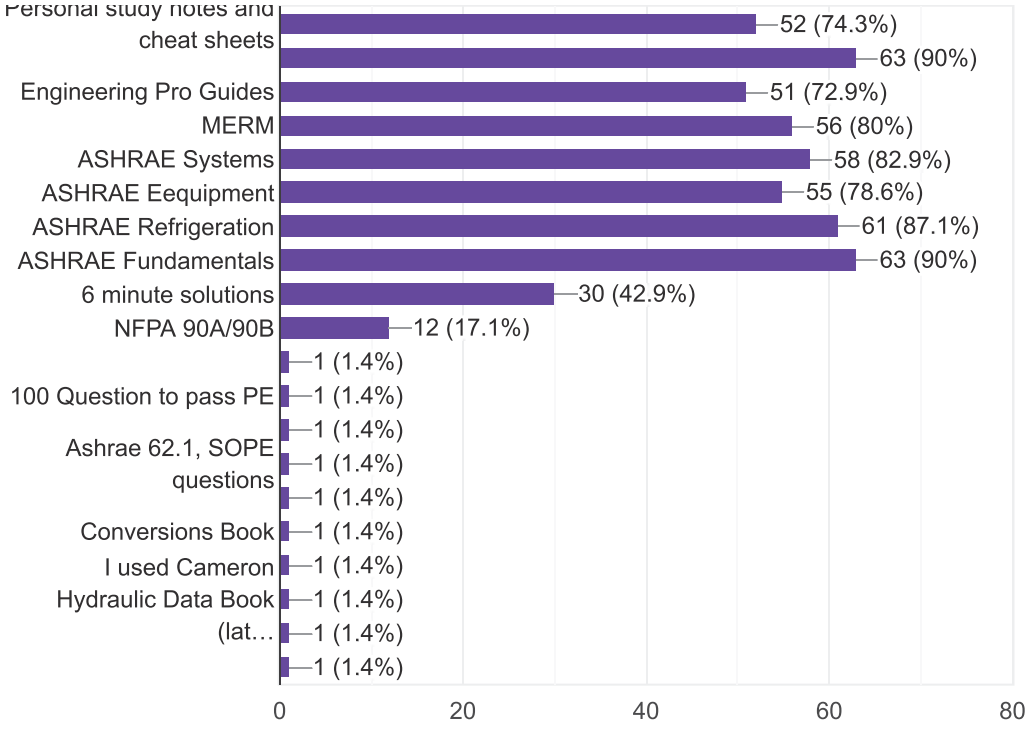
## How many years of engineering experience did you have at the time of the exam in the fields tested by the exam?

70 responses




## Which references do you recommend for the exam?

70 responses



## What do you wish you knew before you started studying?

70 responses

N/A

Don't waste time studying complex fluids problems.

About Engineering Proguides

Focus on the right areas. Solve a lot of practice problems.

That the online .pdf was available HVAC and Refrigeration

Where to find the best refrigeration sources.

How inefficient my time was sifting through the MERM trying to understand everything.

test would be changing to computer based

I spent 2 month going working through the Engineering Pro Guide and 1 month solving problems/practice exams. In hindsight, I wish I had spent more time on problem solving.

Budgeting theory and practice problem time

Start by reading the Pro Guides study guide and doing the practice problems. This is a very good overview of all subjects. I then did the pro guides practice test.

Do the NCEES practice exam first! Then dive into what you need to practice. I spent too much time on some material that was in NO WAY related to the exam.

The importance of knowing the ASHRAE books.

Nothing I can think of.

Spend less time on the MERM and more time with the sample exams and ASHRAE textbooks. 6 Minute solutions problems are much more difficult than anything you encounter on the actual exam.

What materials would be most beneficial to have from the beginning.

The practice problems from the MERM and Ashrae books are way too complex, not really useful for studying. Stick to doing practice exams from 6MS, PPI, ProGuide, & NCEES. Do the practice tests over and over until you can get 70/80 questions.

Your job will be very busy and oftentimes get in the way of studying. Leave yourself plenty of time by beginning earlier, so that you don't find yourself cramming at the end.

Nothing really. I knew what I needed to study for after 1 month of watching school of PE tutorial videos.

don't waste as much time reading through study guide

Do as many practice problems as possible.

The fundamentals

How little I would use the MERM

Wish i knew about Engineering Pro Guides sooner. This is my second time taking the PE exam and my first time I only had MERM and ASHRAE books.

Exam is heavily based on ASHRAE handbooks

How much study time is required to pass the exam. I ran out of time and didn't get to all of my practice exams.

To focus heavily on referencing information

NCEES study booklet

How important to have all the ashrae books

Every single answer could have come out of the ASHRAE books. Should have spent more time just studying those.

Nothing as I passed the first time taking the test.

how to find materials in ASHRAE handbooks

Getting to know more about the ASHRAE fundamental handbooks

That it was going to go faster than I thought it would. I way over-budgeted the amount of time I needed to study, and I crammed so much into the first month or so that the last two months were pretty slow.

4 hours is a long time...

Nothing I didn't already know.

Its a big commitment. Discipline to a regiment is key.

I wish I knew the difficulty and style of the test questions.

Nothing I felt pretty good about the exam I dont know why I only got 51 right

Where to start

Study ASHRAE Fundamentals more

Additional material of heat transfer(such as motors fins) & vibrations

Most of the information are spelled out

HVAC theory

Wish I would have had a guide to lead me through all the general information. I bought the pro guide for that reason, but do not think it was all encompassing and at times, felt like I was wasting my time.

Nothing. I was prepared.

I wish I knew to put less emphasis on what is in the MERM and more emphasis on a study guide similar to Pro Eng. Guide.

I wish I knew that the practice tests were going to be the best thing I could do to study. I would have tried to track down more practice tests to do during my studying.

How close the exam was going to be to the practice exam.

Don't bother with MERM problems unless you have never learned the material in question.

More review time.

They aren't testing you on difficult concepts, rigorous math calls, or anything that take more than a few min to think about. MASTER the fundamentals, understand the concepts and equations and don't focus on the little things...while studying it's easy to go down the rabbit hole and spend hours/days on one topic. The MERM is nice, but its a bit too much info and overwhelming for specifaiclly this test. Without a guided course telling me what questions to solve, t.mhe MERM is essentially useless.....for the test, I referenced eng pro guide manual for topics, and MERM for appendices only...USE ENG PRO guide as your starting point and your bible. Add t o your folder as needed

mostly just drill problems

That the exam was updated in 2017 so some older practice exams have problems that are not relevant any more

You cannot write in anything but the exam book. There are tables and charts in the back of the exam book that can be written on.

Didn't know statics, solids, etc. were off of the HVAC exam because I started studying the first month purely from the MERM 2013 edition.

Nothing

That practicing more problems, and timing them is the best way to prepare.

Use the NCEES sample exam as a baseline

How to do load calculations and equipment sizing for various real-world applications

That the pass percentage was going to be 77%, haha

What a test was like. After the first practice test, I gave the best focus.

The test has a narrow focus and revolves around a few key thermodynamic concepts. Practicing those key concepts through simple problems is the most successful path, so don't waste time exploring complex problems in fringe topics like vibration.

Nothing Really

That the type of questions that would show up on the exam are going to challenge me by forcing me to use engineering judgment and understand concepts more than simply "how" to do problems.

Having Tables/charts of information were extremely important

n/a

Start with the MERM practice questions, then 6-minute solutions, then NCEES Samples test.

# What do you wish you practiced or studied more?

70 responses

Nothing

Heat Transfer

No

I wish I had brought NFPA 90A/90B for reference.

More familiarity with the ASHRAE handbooks

I think i studied sufficient for the test.

More Problems

Paging through the ASHRAE books to better know where to find certain equipment equations.

Combustion balance equations. [redacted]

coal related items

Pressure loss through a pipe

combustion, stoichiometry, mole mass problems

I felt like I had a good grasp on all subjects.

General equipment found within HVAC system design (specifically economizers)

Just working problems in real time settings.

Controls

ASHRAE system specific equations

[redacted]

I feel that they are already transitioning to their NCEES PE handbook. [redacted]. Print out the entire handbook and get familiar with it.

more time doing practice problems

practiced

More complex problems to get past the fundementals and help make the other problems easier

I felt well prepared

Heat Transfer

Being more familiar with ASHRAE books from memory to ease navigating the books. Can't stress enough how important this is.

Pumps and piping systems

Nothing

How system work

Should have tabbed my books better and just gotten more familiar with my references.

Nothing as I passed the first time taking the test.

The ASHRAE fundamental handbooks! There is so many random questions about reference tables and actual practice that this is tough to predict which will cover what. Had to check several time during the exams for specific equations and text descriptions. Also the NFPA code is to bring to the exam in case a question or two shows up. EngProGuide has this RefExam booklet to purchase to practice some questions. There are representative of the exam. I suggest to buy it.

I would have studied specific pieces of equipment/systems a little bit more.

Fluids

Practice problems

I wish I studied more VAV systems, controls and building code driven questions.

Nothing i covered basically every topic

Mass and energy balance

ASHRAE Fundamentals

heat transfer(such as motor fins) and vibrations

I had ample time

heat transfer

Combined cycles and power generation

Again, nothing really. There weren't any major curveballs.

Nothing. I passed.

I wish I was more familiar with the ASHRAE manuals.

Fluids Problems

Units: short tons, boiler horsepower, etc

Heat Transfer, Fluid Mechanics, Energy & Mass Balances, Supportive Knowledge

Heat recovery

nothing, really. It was a slam dunk

Problems that require looking up info in ASHRAE or other standards

nothing

Felt overall comfortable with most of the problem solving questions. Wished I had read more references for the sake of knowledge through my first 5 years. A lot of the knowledge-based look-up questions are tough without a general knowledge of HVAC information.

I wish I had understood more about piping and controls.

This is a required question

ASHRAE Handbooks

Probably fluid dynamics, but i passed so.....not really.

I think I maxed-out, was comfortable in each area and studied-up where I was weak. I stopped studying on Tuesday night. Test was on Friday.

Looking up problems and tables in the ASHRAE books. I had all 4 of the books but it took time for me to go to the index and then find the right book and page, so more familiarity with them would have saved time.

Psychrometrics. Enthalpy Wheels

I wish I had studied more VAV application based problems especially how reheat is controlled and how the overall system works.

Wish I had a few more basic information from the ASHRAE books down. MAY or MAYNOT of had to have freezing enthalpies for two obscure food items only found in AHSRAE books

n/a

Controls

Slowing down and understanding what the problem asked for instead of jumping to solve the questions

## Additional comments or words of advice for future test takers?

70 responses

Keep a detailed log of all practice problems you bring into the exam room for quick reference if needed.

For the HVAC exam, Engineering Proguides is a game changer.

Dont stress out. The exam can be passed if you focus on the right areas, try and get a hold of a couple of practice exams.

Work as many problems as possible, and know your resources inside and out

The 6 minute solutions are far harder than anything I saw on the test for the most part. Get used to the 4 hour blocks at least 2 weeks in advance, and have good tab structure in your reference books.

Study the NCEES practice exam thoroughly and make sure you fully understand the concepts, why certain values are assumed for heat equations.

Don't neglect engineering basics. They should be easy points. Reading the merm is actually helpful.

Test will be changing to computer based in 2020.

Create your own cheat sheet binder that is a condensed version of the pro guide with formulas and pictures for visual reference. Also, included lookup locations next to sections to allow for faster retrieval of information.

make an index of practice problems based on high frequency keywords

Prepare your notebooks and materials at the beginning of studying so you use them throughout studying and will know where everything is and what you will/won't need on exam day.

Take your time on the test. Four hours is plenty enough to get through all of the problems, so if you finish early, spend some of your extra time to review some questions that you may not feel as comfortable on.

You need to be familiar with the ASHRAE books and the new computer based test book that is on NCEES website. Tag your most current ASHRAE book index by letters so you flip less and save time.

Take all the practice tests you can find. Take a practice test early in your studies to find your strengths and weaknesses.

Understand concepts before approaching problems!!

The best way for me to study was to brush up on the material first, reading engineering pro guides refreshed my memory well. And do as many practice problems as possible.

I had a digital watch and the proctor lady took it away in the beginning. But eventually she talked to her boss and finally gave it back to me. I was so lucky to get the watch back because otherwise i would have no way to pace my time. They only announce time 15min left, 10min left, and 5min left and there are no clocks in the gym. So do not bring digital watch, use analog watch only.

I also take a review course from school of PE. They had some really tricky problems that i have never seen before. But more importantly i feel joining a review class and study group is very important so that you won't feel alone in the studying process. It is good to talk to other people and figure out how they are solving the problem better in a different way and you can see where they are making mistakes and improve upon them.

Make sure you begin your studying well in advance. This will allow you to take off time from studying when work/life gets in the way. Study more than you think you need to and then study some more. The worst thing that can happen is failing and then looking back saying, "I could've done more to pass."

First thing is to understand the scope of what is being tested. Use the scope to review the Merm, highlight important formulars, make your own cheat sheet. Understand formular manipulations using units units units. Then throw yourself away with questions. Solve questions over and over again even if you got it right. It helps increase speed and open your mind to the concept being tested. Good Luck.

Do practice problems and read through the study guide for questions that are giving you the most trouble

organized/review your materials and do as many practice problems as possible.

Just do lots of Practice problems

Give yourself minimum 12 weeks to prepare. Go over all resources at least twice, three times preferably.

Go over engineering pro guides first before looking through MERM and ASHRAE books. The mechanical study guide saved me hours from studying off-topic sections on MERM.

Read carefully. Identify unusual things in a question that will change course of solving process e.g. VAV minimum/required minimum

Study hard and never give up. Bring a cushion to sit on, the chairs at my site we're very uncomfortable to the point I had to step away from the test just to get out of the chair.

For the exam, focus on answering the questions you know. The goal is to pass, not to get everything correct. It doesn't matter if you get a 100% or pass by one point.

Practice a lot of problems. Understand how the answer was derived and remember that there are different ways to reach the same result.
Prepare personal notes and equations

Prepare for computer exam

Stay calm and carry on.

I knew I was over preparing for the test but I really wanted to pass it the first time rather than doing try and error multiple times, and now I'm glad I was over prepared. Start with the Engineering Pro Guides. You'll finish it in 2-3 weeks. It gives you a great idea of the test. Then go thru MERM and do the problems that are in HVAC&R. Don't spend so much time reading the whole book or doing all the problems. In parallel just page thru the 4 ASHRAE handbooks + ASHRAE 15, 62.1, 90.1, NFPA90A/B. You get questions from these standards, some of them are easy to find, some are really hard. So, you have to know them. Label the sections as you go thru. It really helps you on the exam. Also, 2-3-4 weeks before the exam, start doing practice exams from ENG Pro, the reference exam from Justin, 6 MS, and NCEES. Last tip, get used to sitting focused for LONG time.

Make a table of contents of all your practice problems, sorted by type of problem. Itll make it easier to find a reference problem during the exam.

Study hard and commit to a schedule. Don't get too much distractions. Momentum is built from each baby step. Everything else after your family is secondary. Take the exam before you have kids! My plan: study 2h every night, and 8h-15h on weekends. Give it 4 months straight. Go to the gym instead of watching netflix or any other series. It will provide you stamina. I took it the hardcore way, no party, no alcohol to maximize my chance to pass.

Work as many practice problems as you can.

Be really familiar with where formulas are located within your resources so you can find them quickly. And know the sensible heat equation.

Practice

Leave 3 weekends worth of study time for practice exams. Take the evening before the exam to relax and not study. Breathe.

Study lots

Focus on practice problems and knowing where to find materials.

Count your correct answers thats my mistake i know for a fact i got more than 51 correct answers as i only guess a few during exam

Set deadlines when studying to make it manageable. Treat it like eating an elephant

Practice examples as much as possible

Study Engineering Pro Guides for the exams

practice solving problems and be aware of the details (exam site, parking, etc.)

need to study application

Skim through a basis of everything. Don't spend time reading chapter of MERM.

Do a lot of practice exam problems.

Everyone taking this exam should buy the ASHRAE focused practice test. It helped to give me an in-depth understanding of what was contained in each ASHRAE reference manual and where to find it.

Buckle down and take as many full length practice tests as you can. I spent three Saturdays in a row taking full 8 hour exam and it was the best thing I could have done to prepare. I wish I had been able to find more practice tests.

Concentrate on variations of the NCEES practice test problems. Memorize shortcut equations.

Take as many practice exams as possible, repeat until you have it perfected.

Put in 200-300 hours and do more practice problems

Study hard, pass test easy :) PUT THE TIME IN AND MAKE IT EASY ON YOURSELF!!!!!!!

Drill problems, but understand concepts. And, learn to pinpoint exactly what problem is asking for

Get the most recent study guides/practice exams, review the category breakdown of problems on NCEES

Take as many practice exams as possible and sit down for the full 8 hour exam with an hour break. This will help with pacing and deciding when to move on. I had a strategy of skipping questions and coming back and that helped a lot by not getting stuck on a single question.

If you like self study, start early and a review course is not required. Great internet sources like EPG, in combination with good old studying of books and homework-style problem solving make this possible.

Work a lot of problems. Study consistently a little bit every day and it's not too bad.

Study more than you think you need so that you can go in over-prepared! It will make the real exam seem easier.

Suffer the agony of discipline or the agony of regret

Study ASHRAE Handbooks, especially Equipment & Systems; do lots of practice problems involving plotting HVAC processes on psychrometric charts; don't skimp on fluid mechanics (especially sizing pumps and fans) and heat transfer; work the Engineering Pro Guides Practice Exams, especially the one with qualitative questions from ASHRAE Handbooks.

Be consistent and keep pushing thru even if you feel like you aren't getting results. One day things will open up and that study time will be shown. For me it was 2 weeks before the exam i finally felt pretty good and i started 3 months out.

Take as many practice tests as you can, timed and un-timed. Gather practice questions- have someone you trust "mix-up" some questions different from what you have seen. Best advice I had was taking practice tests; I took 3.5, three 80-Q and one 40-Q. Got more comfortable each time.

Learn through various mediums. Read different books, watch videos, talk to other engineers and study in different places. The exam is like a marathon and you don't know what bumps you'll hit in the road or weird

things will happen in the exam room to unnerve you.

Please give more problems that are not to be found on ASHRAE manuals. Regular problems, although Your ASHRAE problems helped Me greatly on the exam

No matter how hard you study, it's very important to keep your mental health in check. Take breaks, take days off here and there to focus on having fun and relaxing. A day or two off sometimes allows you pick back up with a clearer mind and capable of absorbing more material. It can be very stressful to work, study for the PE, and somehow find the time for yourself, family, and friends. However, finding a healthy balance will result in better results in regards to your mental stamina.

Learn the sample test, take good notes in with you, and it'll be a breeze

in this exam i done answering morning exam questions within three hours, so i had one hour checking my answers and i didn't have the ability to solve 5 questions, and the same think happen to me at the evening exam.

Buy a MERM and write in it, borrowing someone else's means you can't really highlight what you find is important during practice tests.

Take your time and keep your resources to a minimum. The more books you are looking though, the more time you will waste.

## If you purchased an Engineering Pro Guides product, please leave a review for the Engineering Pro Guides material. Any suggestions on how to improve or comments on what you liked and what you didn't like will be very helpful.

53 responses

For the HVAC exam, I used Engineering Proguides reference manual and practice test. The manual is great and the practice test is the closest I've seen to the real deal. More practice problems would be nice but I think you were working on that already.

I would totally recommend the engineering pro guides full exam and formula cheat sheet. The engineering pro guides full exam and the cheat sheet helped me significantly. I had a couple of questions which were sort of similar to the ones in the practice exam or at least used the same concept. The formula cheat sheet also helped me with a couple of questions, the formulas for those i could not find elsewhere.

I purchased the sample test and thought it was very useful. Would like more difficult questions. The HVAC manual is a must purchase in my opinion.

I did last exam

The cheat sheet guide was lacking and did not seemed to be organized in any manner other than chapter. I had to create my own for use during the PE exam.

Engineer Pro Guides was the most critical material I studied from and would highly recommend it. Absolute best combination of what I need to know to pass and what I should know to be a well rounded HVAC+R

engineer

So helpful. The Merm was overwhelming and when I found the study giude and practice test it really helped me determine what I actually needed to study and gave me a great starting place.

The information was all there, but I think the organization and consistency needs some work. I took a lot of the guides and helpful tables and ended up organizing my own so that I could find information faster.

The guides are very helpful, especially the reference guide because it makes you get familiar with the ASHRAE books.

I purchased the practice test and references test. Both we great and similar difficulty to the actual exam.

EPG products were easy to follow and were a very accurate representation of what to expect on the exam. It seemed like there were some errors in equations here but nothing that you wouldn't notice if you're familiar with the material.

The books I purchased were the best investment I made for the PE exam. The material was concise enough to quickly get me back up to speed from what I had forgotten in school. I don't have any negative remarks.

I purchase all the ProGuide products with the study guide and 2 practice exams. They are very good as explaining things in easy to understand manner and will definitely help in studying. Even though I read the MERM things didn't start to click until i read the ProGuide study guide. Definitely recommend. The amount of material that you get is amazing. Some practice tests (80 question) alone cost $100 and the entire ProGuide study guide is only like $40.

Very good introduction to basic concepts that will be found on the exam. For more realistic problems, consult NCEES practice exam and 6 minute solutions.

I think the material was worth it. It helped reinforced topics tested and gave me opportunity to practice with more questions.

It's a good guide for exam preparation and information at the exam. I noticed some errors that needs to be corrected.

Equation sheets were helpful. The textbook materials was often too general, except for a few cases, and found a few mistakes.

Minor errors noticed in some practice problems but other than that the study guide was critical as it gave me the structure I needed at a micro fraction of the cost that other course cost.

Great material! Will definitely recommend to my engineering friends taking the Mechanical HVAC and Refrigeration PE exam.

EPG study guide was great at learning all of the basics or being refreshed on the important things. Easy to read and understand. Please update some typos that did not match with same comment elsewhere in book.

You and your Pro Guides have helped me turn my career around. I have taken the ME exam either 4 or 5 times each time studying the MERM with no success. I studied your materials and practice exam once and passed. I have been out of college for 16 years and the way you explain the topics helped me to remember and learn new material unlike the MERM. Thanks a million. Time for a new job with my new PE title.

I like the older version that had the equations at the beginning of the chapter

More fan/pump law problem. Add food refrigeration problem.

It's a great material, very helpful, but definitely it is not sufficient.

10/10 would recommend the engineering pro guide exam and cheat sheets

Wonderful material, bought the review book, the exam book and supplement exam book. While I figured some typos here and there, this is a WONDERFUL material to bring with you at the exam. JUSTIN YOU ROCK. THANK YOU.

I purchased the full exam and the references exam. I loved the references exam, it really helped me become more familiar with the required references.

The full exam was helpful but not the best, I would use it more as concept review and practice problems than as an actual assessment of your skills and ability to take the exam. First, there were several problems where it seemed that the acceptable margin or error for reading a graph was not at all considered. For example, you might have to read enthalpies off a refrigerant diagram - even if you did the problem correctly and were within ~5% of the actual, precise enthalpy values, you would get very close to an incorrect choice on the multiple choice selections. There is no way to read a graph 100% correctly, and it seems that the multiple choice answers in these cases should have been farther apart. Second, there were quite a few inconsistencies between the solutions for difference problems in the exam. For example, some used nominal pipe diameters and some used actual pipe diameter. Some accounted for inside/outside surface resistance in a heating/cooling load calculation, some didn't. Some accounted for radiative heat transfer, some didn't. And sometimes these actually made a difference in your ability to get the correct answer. I understand there may be good reason to do it one way or the other, but if there are internal inconsistencies in the exam solutions then they should be rationalized. Otherwise you can't possibly learn why to use one versus the other, and which way the actual PE exam will actually expect you to use.

I used the Pro Guide more than any of my other resources, likely because I was most familiar with where all the equations were. The sample problems are useful, but it could use some additional problems that are more difficult. In general, the problems on the actual test were harder and more complicated than the sample problems in the Engineering Pro Guide.

more practice problems that delve into the basics of the material that are more advanced.

Engineering Pro was very helpful in studying for the exam especially with the HVAC material (systems, components and practice problems).

Good quality study material. Was a huge help

The Pro Guide was the most helpful study material I had. The practice problems were great, and this is the study material I will recommend to future test-takers.

Please add more information on heat transfer (such as motors fins) and vibrations

I like the practice problems and the tips for other reference materials.

sample problem is easier than real

The study guide problems were redundant and not all encompassing. There should have been more variety and difficulty in the exam problems. I was looking for a middle ground between the 6 minute problems and the problems outlined in your study guide. It was a good place to start but could definitely be improved upon. I do not think the study guide did a good job touching on all subject that were covered. Some parts, yes, other parts, no. I was expecting more.

It was very helpful. It had problem types that I didn't find on other practice exams.

I really enjoyed the Engineering Pro Guides - it was a super helpful high level review after going through the sections in the MERM. I was a handy cheat sheet to have to quickly reference throughout my studying and the test. The most helpful part (for me) was the refrigeration section and chart breakdown. I referenced that on every refrigeration problem I did. The way it was explained was super helpful to me.

Engineering Pro Guides practice exam was amazing help.

Very useful material.

First thing anyone should do after gathering your materials is read Eng pro guides and solve the problems. Then move onto your other material. This is no doubt the best guide/manual you need and to get you going. It's probably ALL you need. I did a lot of wasteful studying and the eng pro guide will stop that from happening. Start here, save money and time. Add materials where you need to.

I found the EPG very helpful. I had made some remarks about some issues I saw with a couple of the problems already, so I consider that my constructive criticism.

Study guide was great. Read it, understand it, work a lot of problems.

I purchased the practice exam and found it helpful. It was one of three practice exams I took the week before the exam, and I felt it gave my confidence, as I had seen a lot of the problems before and knew how to do them, unlike most of the problems on the NCEES exam, which I took about month before the exam.

I tried the online test but they seemed out of step with the practice exam.

Really like the extra practice problems that final month before the exam. Helped me measure where I was.

I will get back to you on this, Justin. I have notes throughout the book. What I will recommend though is, when buying your PDF publications, pay the $80 or so to have them printed at your office store and spiral-bound and on better paper like 30 lb. The study guide I bought was two volumes double-sided. Very much worth doing and they are keepers.

The cheat sheets were very helpful and had some simplified equations for vapor compression and economics that I found nowhere else. These were affordable and the critical pages went into my spiral binder - a place that only the best notes and references land.

The material was great. Do not have any complaints. Did not take Yoy review manual to the exma thogh. Figured MERM, My notes and practice problems (Including Yours) would be enough. It was more than enough actually

More information on electric heating, VRF, and VAV systems would have been beneficial as these are real world solutions that are becoming more and more popular in the industry.

It covers the basics very well. The Cheat Sheet used by EngProGuides is a bit clustered and hard to find information easy. I found a self made cheat sheet to be much more effective. Otherwise, great work ;)

your books are good and help a lot to direct the student towards answering the questions.

I am SO happy that I found out early in my studying about Engineering Pro Guides Technical Study Guide!! The Guide gets right to the point for each topic and explains how to use each equation. I highly recommend purchasing the study guide when studying, it is worth every penny!!