

**Study Guide – Electrical, Carpentry, and Plumbing  
ABC NorCal**

**How the written exam works:**

As the first step of the application process for any of ABC NorCal's apprenticeship programs, you will be scheduled to take a written exam. This exam consists of five parts (reading comprehension, mathematics computation, applied mathematics, language, and listening) and it is timed. You will need to pass each section of the exam with a score of 70% or better to move on to the next step of the application process.

**Instructions for this study guide:**

- 1) Please collect the following before beginning this study guide:
  - a. Pencil and paper
  - b. Calculator
  - c. Stop Watch (optional)
  
- 2) If you want to take the practice test just as you would the written exam, follow the below outlined time limits for each section. No breaks are allowed during the exam. Cell phone use is strictly prohibited.
  - a. Reading Comprehension – give yourself 25 minutes for this section of 25 questions
  - b. Mathematics Computation – you are not allowed to use a calculator for this portion of the exam. Give yourself 15 minutes for this section of 25 questions.
  - c. Applied Mathematics – give yourself 45 minutes for this section of 45 questions. In the actual test, you will have 25 minutes for a section of 25 questions. We have added extra practice in for you to get used to the type of questions you will be dealing with.
  - d. Language – give yourself 25 minutes for this section of 25 questions.
  
- 3) If you just want to know what kinds of questions will be on the written exam, please feel free to peruse through the below study guide.

## PART ONE: READING COMPREHENSION – 25 minutes

Here's an article from ABC NorCal's blog. Read the blog article. Then do numbers 1 through 4.

### Who turned up the heat?

Posted @ 6/27/2013 7:07 AM

If you haven't heard, weather forecasts for the next week have most of Northern California shedding the sticky, tropical humidity of the past couple of days and temperatures increasing to triple digits. (Now there's the hot, dry California summer we all know well.)

This is the time when employers with outdoor work sites go on high alert. It's also the time when Cal/OSHA reminds construction professionals to take extra precautions when it comes to ensuring their workers are acclimatized to the heat. In addition to the heat illness prevention trifecta – water, rest and shade, there are special procedures for when temperatures exceed 95 degrees.

Do you know your "high heat" protocols? Here's a little refresher.

- Observe. Know the symptoms of heat illness. Watch for these signs in your workers.
- Remind your team to drink water often.
- Watch new employees (on the job less than two weeks) closely.
- Communication preparedness. Know who will be calling for emergency help, who to call and when to call.
- Have a plan for emergencies, just in case someone becomes ill.
- Consider scheduling work to avoid peak heat.

For the official California heat regulations, visit the Department of Industrial Relations (DIR) website.

*Megan Kilkenny is the Communications Director for ABC Northern California.*

<http://www.abcnorcal.org/ABC/NewsResources/NorCalBlog/tabid/457/entryid/1160/Default.aspx>

- 1) This blog article is mostly talking about
- A. the importance of wearing sunscreen
  - B. tips to prevent dehydration
  - C. tips to prevent heat illness
  - D. weather patterns in Northern California

- 2) According to this blog article, there are special procedures to follow when the temperature
- A. exceeds 95 degrees
  - B. exceeds triple digits
  - C. is considered hot and dry
  - D. exceeds 80 degrees

- 3) The author uses the phrase "go on high alert" to show that employers with outdoor work sites are
- A. stopping work on the jobsite
  - B. more concerned about the heat
  - C. pulling an alarm
  - D. not doing anything

- 4) According to this blog article, what is considered a "new employee"?
- A. An employee on the job less than two weeks
  - B. An employee on the job less than a month
  - C. An employee on the job less than a year
  - D. An employee on the job less than two months

Here is an excerpt from the blog post “Celebrating Anne Quick's contribution to apprenticeship in California”. Read the blog article. Then do numbers 5 through 7.

## Celebrating Anne Quick's contribution to apprenticeship in California

Posted @ 12/12/2013 1:10 AM

I once heard someone reference Anne as the “mother of merit shop apprenticeship in California” and that she certainly is. She formed five state and federally approved merit shop apprenticeship programs for Associated Builders and Contractors Northern California Chapter (ABC NorCal), getting them off the ground, running and winning awards. She also spearheaded ABC NorCal’s accreditation with the National Center for Construction Education and Research (NCCER), became NCCER Master Trainer Certified and helped rewrite program standards several times. The state looked to her when Electrician Certification was approved and she traveled throughout California with then Division of Apprenticeship Standards (DAS) Chief, Dave Rowan, educating C-10 contractors.

Over the years, Anne has shared her knowledge and expertise via many avenues including the California Association for Advancement of Apprenticeship and Training (CAAAT) (of which she still serves as treasurer), the Sub Committee on Equal Opportunity in Apprenticeship for California (of which she chaired) and the Statewide Electrical Certification Taskforce (of which she also chaired).

When Governor Schwarzanegger appointed Anne as Commissioner to the CAC, it was such a tremendous win for the construction industry. Her knowledge, experience and leadership (she served as Chairperson in 2009) have helped guide and advance apprenticeship programs across the state and keep a level playing field. In 2010, she received the highest of honors and became the first woman inducted into the Department of Industrial Relations’ (DIR) Hall of Fame. A fitting crowning achievement for such a deeply respected and extremely talented individual.

<http://www.abcnorcal.org/ABC/NewsResources/NorCalBlog/tabid/457/entryid/1719/celebrating-anne-quicks-contribution-to-apprenticeship-in-california.aspx>

5) Which of these words best describes Anne’s professional career?

- A. average, typical
- B. uneventful, boring
- C. simple, entertaining
- D. successful, eventful

6) The blog article states Anne spearheaded ABC NorCal’s accreditation with the National Center for Construction Education and Research (NCCER). *Spearheaded* means about the same as

- A. Created
- B. Led
- C. Invented
- D. Stopped

7) Which of these statements probably explains the main reason why Anne was inducted into the Department of Industrial Relations’ (DIR) Hall of Fame?

- A. She was a commissioner on the CAC
- B. She is extremely experienced, knowledgeable, and passionate about the industry
- C. She chaired the Statewide Electrical Certification Taskforce
- D. She formed the five ABC NorCal apprenticeship programs

Here is a handout for information on ABC NorCal's Veteran Incentive Program. Read the handout. Then do numbers 8 through 11.



## ABC NorCal's Veteran Incentive Program

Being a veteran has its perks here at ABC NorCal. Veterans may be placed at the top of the out-of-work list after successful completion of the application process, regardless of when they applied or how many people are ahead of them. Anytime thereafter, veterans may be placed at the top of the out-of-work list, giving them precedence over other apprentices simply because they are a veteran.

This is ABC NorCal's way of saying thank you to all of the brave individuals who have served our country.

ABC NorCal is currently approved for V.A. Benefits such as the Post 9/11 G.I. Bill. For more information on the Post 9/11 G.I. Bill and to see if you are eligible, please visit: [www.gibill.va.gov](http://www.gibill.va.gov).

For more information on the programs offered at ABC NorCal, please visit [www.abcnorcal.org/apprenticeship](http://www.abcnorcal.org/apprenticeship).

8) Which of these cannot be found on this handout?

- A. a website address
- B. information on ABC NorCal's Veteran Incentive program
- C. how much compensation V.A. benefits provide
- D. an ABC NorCal logo

9) According to the handout, when veterans are returned to the out-of-work list, what may happen?

- A. they will be placed at the bottom of the list
- B. they will be dispatched immediately
- C. they will be placed at the top of the list
- D. nothing will happen

10) The guide says that veterans will get priority over other apprentices. What does the word priority mean?

- A. guarantee
- B. priority
- C. independence
- D. guidance

11) According to the handout, when is the **first** time a veteran will be placed at the top of the out-of-work list?

- A. after successful completion of the application process
- B. as soon as they apply
- C. after their first class
- D. as soon as they are approved for Post 9/11 G.I. Bill benefits

Here is a class attendance sheet (also known as a sign-in and sign-out sheet). Study for sheet. Then do numbers 12 through 15.

<b>Class: Test Class</b>				
Instructor: _____		Delivery Method – Class/Lab		
Date: _____		Agreement Number – ET14-0901 – ABC NorCal		
		ETP Type of Training – Commercial Skills		
		Job No – 1		
Student	Time In	Signature	Time Out	Signature
Test Student	_____	_____	_____	_____
Bob Test	_____	_____	_____	_____
Test Test	_____	_____	_____	_____
Instructor Signature: _____		# of Hours: 7.50		
Please use black or blue ink.				
Reminder: Failure to sign in and/or out and/or indicate times will be considered an absence!				

- 12) The main purpose of this form is to
- A. keep track of attendance
  - B. have the students signatures on file
  - C. give information on what the class is about
  - D. keep track of what time class starts and ends
- 13) The form requires each student to sign-in and sign-out. What else does the form indicate needs to be filled in by the student?
- A. the date of the class
  - B. the instructor's signature
  - C. time in and time out
  - D. nothing
- 14) Test Student shows up for class at 6:55am. What should he do when he arrives?
- A. indicate time in as 7am and sign under instructor signature
  - B. indicate time in as 6:55am and sign next to Test Student
  - C. write in the date
  - D. indicate time in as 6:55am and sign next to Test Test
- 15) Which of the following is an opinion about the class sign-in form?
- A. several signatures are required on the form
  - B. the number of hours in the class is 7.5
  - C. the date is requested on the form
  - D. the form is easy to understand and fill out

**Below is an excerpt of the first email sent in an email campaign for graduates. Read the email. Then do numbers 16 through 19.**

When I was first hired on as the Apprenticeship Services Coordinator, I took one look at the apprenticeship program and noticed there was a huge link missing. At the time, we were graduating apprentices and not providing them with any useful information of how to make it in the workforce. We weren't providing graduates with any information on their options after graduation. I knew something needed to be done.

Enter: the graduate's project. My goal was to collect all of the resources I could and compile them into interesting and informational emails that could be sent to graduates upon graduation. I spent roughly a year collecting information and resources. I attended workshops, spent countless hours researching online and gathering resources, and spent many restless nights mulling over the information.

What is to follow is a product of many contributors, hard work, and dedication. And the best part is it's all to help you develop yourself into a valuable member of the workforce after graduation. Here's a glance at what to expect:

1. Resume development tools – tips & tricks of the trade
2. Developing Networking Skills
3. Interviewing Skills (from the experts!)
4. How to survive your first day at a new company
5. How to discuss raises
6. Advice on saving money
7. Importance of continuing education/assessments
8. How to become certified by the Contractors State Licensing Board
9. Tips to starting your own business
10. Financial planning advice for the future

- 16) The purpose of the graduate's project is to
- A. provide graduates with a job
  - B. provide resources to graduates
  - C. help apprentice graduate the apprenticeship program
  - D. provide graduates with something to do

- 18) How long did the author spend collecting information and resources for the project?
- A. 18 weeks
  - B. the article does not say
  - C. about a year
  - D. too many to count

- 17) Choose the best summary of the email.
- A. The graduate's project was developed to provide resources to graduates after graduation.
  - B. The author sat through many workshops.
  - C. The graduate's project provides resume development tools.
  - D. Continuing Education is important.

- 19) Read this sentence from the email:
- I knew something needed to be done.*
- The author probably included this detail to show that he/she was
- A. afraid
  - B. determined
  - C. uninterested
  - D. uncomfortable

Below is an excerpt from the construction craft laborer classroom tool list. Study the list. Then do questions 20 through 23.

### Construction Craft Laborer Classroom Tools and Materials

**Tools/Materials - Students are required to bring these into class each day. Students that do not have their required tools at any time during the schooling period could possibly fail their exams and/or performance profile:**

- Notepad, pen, pencil, and highlighter
- Scientific Calculator (example: Texas Instruments; TI-30 – calculators on your phone are not allowed)
- Tape Measure
- Utility Knife
- Combo Screwdriver
- Lineman’s Pliers
- Work Pencil
- Hammer
- Knee Pads (optional)
- Margin Trowel

Note:

There will be a tool check on the first day of class. Supplies will not be provided by ABC NorCal. Students that do not have in their possession an item from the above list are still expected to participate in class and pass the exams. Sharing of personal tools between students in order to meet classroom requirements is prohibited. Please mark and identify all tools and equipment (engrave or paint).

- 20) This list was created to
- A. inform students of the tools/materials they are required to have on the jobsite.
  - B. inform students of different types of tools
  - C. inform students of the tools/materials they are required to bring to class
  - D. inform students of the types of calculators permitted at the training facility

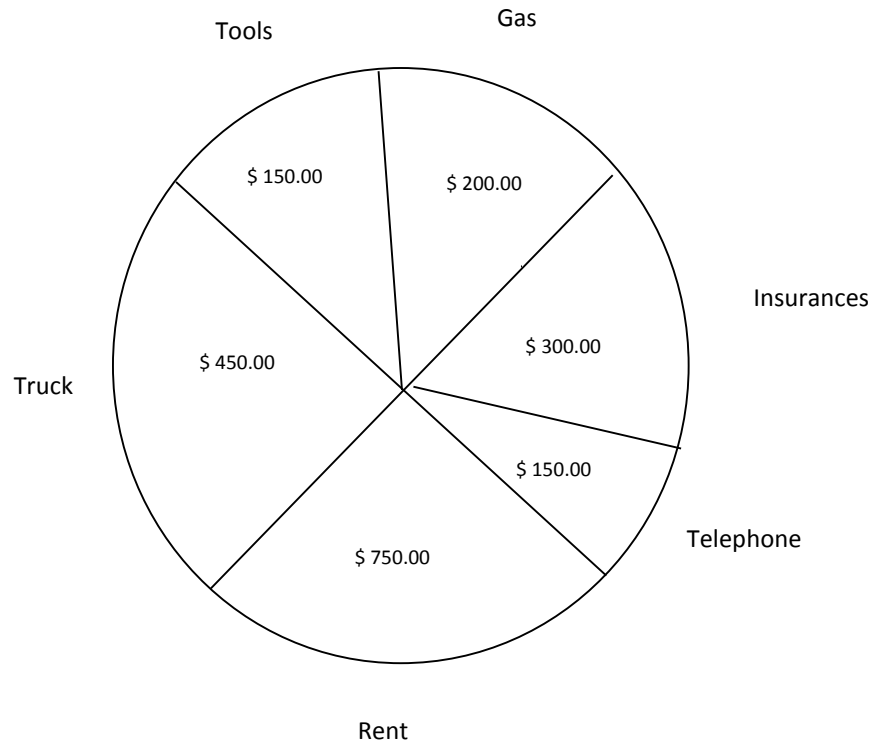
- 21) According to this document, which of these is a required tool/material?
- A. laser level
  - B. air compressor
  - C. power drill
  - D. tape measure

- 22) According to this document, what could possibly happen if a student does not bring the required tools?
- A. the student may fail their exams and/or performance profiles
  - B. the student may be supplied tools by ABC NorCal
  - C. the student may have to share tools with another student
  - D. the student may be dropped from the program

- 23) When will there be a tool check?
- A. at the end of class every day
  - B. at the beginning of class every day
  - C. on the first day of class
  - D. on the last day of class



Below is a circle graph that shows how an electrician spends the \$2,000 that it costs him to run his business. Study the graph. Then do numbers 24 and 25.



24) According to the graph, what does the electrician spend the most money on?

- A. Truck
- B. Insurances
- C. Rent
- D. Telephone

25) Which expense costs more than \$300.00 but less than \$500.00?

- A. Truck
- B. Tools
- C. Gas
- D. Telephone

**PART TWO: MATHEMATICS COMPUTATION – 15 MINUTES**  
**YOU ARE NOT ALLOWED TO USE A CALCULATOR DURING THIS PORTION**

- |                                  |  |  |  |
|----------------------------------|--|--|--|
| 1) $5.90 - 2.03 =$               | A. 2.87<br>B. 7.93<br>C. 3.87<br>D. 3.93<br>E. none of these   | 8) $\$83.43 \div 27 =$   | A. \$3.09<br>B. \$30.90<br>C. \$3.00<br>D. \$3.90<br>E. none of these  |
| 2) Solve for x.<br>$X + 10 = 10$ | A. 0<br>B. 1<br>C. 20<br>D. 100<br>E. none of these  | 9) $5^2 \times 2 =$  | A. 25<br>B. 100<br>C. 625<br>D. 50<br>E. none of these   |
| 3) $7\frac{4}{9} - 5\frac{1}{9}$ | A. $2\frac{1}{3}$<br>B. $1\frac{5}{9}$<br>C. $2\frac{5}{9}$<br>D. $2\frac{2}{9}$<br>E. none of these | 10) $0.6 \times 100 =$   | A. 600<br>B. 60<br>C. 6<br>D. 66<br>E. none of these   |
| 4) $90.48 + 0.687 =$             | A. 89.793<br>B. 97.35<br>C. 91.167<br>D. 158.7<br>E. none of these                                   | 11) $484 \div -4$  | A. -110<br>B. 11<br>C. -11<br>D. 110<br>E. none of these   |
| 5) $\sqrt{121}$                  | A. 10<br>B. 121<br>C. 11<br>D. 24<br>E. none of these  | 12) 100% of $\square = 94.3$   | A. 0.0943<br>B. 0.943<br>C. 9.43<br>D. 943<br>E. none of these   |
| 6) $-15 + 8$                     | A. 23<br>B. -23<br>C. -7<br>D. 7<br>E. none of these   | 13) $-25 \times -8 =$  | A. -37<br>B. 37<br>C. 200<br>D. -200<br>E. none of these   |
| 7) $2^3 + 2^2$                   | A. 32<br>B. 12<br>C. 20<br>D. 10<br>E. none of these   | 14) $\begin{array}{r} 8\frac{4}{15} \\ + 7\frac{3}{5} \\ \hline \end{array}$ | A. $15\frac{7}{15}$<br>B. $15\frac{7}{20}$<br>C. $15\frac{9}{15}$<br>D. $14\frac{9}{15}$<br>E. none of these |

- 15)  $0 - 18 =$       A. -18  
                               B. 18  
                               C. 19  
                               D. -17  
                               E. none of these
- 16)  $\frac{-63}{-9}$               A. 7  
                               B. -7  
                               C. -72  
                               D. 72  
                               E. none of these
- 17)  $25 \times \frac{1}{10}$             A. 2  
                               B.  $2\frac{1}{2}$   
                               C. 25  
                               D.  $\frac{2}{5}$   
                               E. none of these
- 18)  $8 - (3 + 5)^2$       A. 30  
                               B. -56  
                               C. 100  
                               D. 56  
                               E. none of these
- 19)  $\frac{16}{7} \div \frac{4}{7}$             A.  $\frac{1}{4}$   
                               B.  $\frac{20}{7}$   
                               C.  $\frac{23}{28}$   
                               D. 14  
                               E. none of these
- 20) 15% of 200        A. 15  
                               B. 30  
                               C. 150  
                               D. 300  
                               E. none of these
- 21)  $3 \times 6 + 18 \div 9$     A. 20  
                               B. 8  
                               C. 4  
                               D. 324  
                               E. none of these
- 22) What percent of 410 is 41?      A. 100%  
   B. 0.1%  
   C. 10%  
   D. 15%  
   E. none of these
- 23)  $(7 - (-2)) \times -6 =$       A. -1  
   B. -54  
   C. 54  
   D. 30  
   E. none of these
- 24)  $\square\%$  of \$2.50 = \$0.50      A. 0.2%  
   B. 2%  
   C. 20%  
   D. 200%  
   E. none of these
- 25) Simplify.  
 $2(9r^2 - r) - 5r =$             A.  $-90r^3 - 10r^2$   
   B.  $18r^2 - 7r$   
   C.  $-18r^2 + 2r$   
   D.  $-18r^2 - 2r$   
   E. none of these

### PART THREE: APPLIED MATHEMATICS – 45 MINUTES

1) Arrange the following fractions from smallest to largest:  $\frac{1}{2}$ ,  $\frac{2}{3}$ ,  $\frac{1}{6}$ ,  $\frac{5}{8}$ .

- A.  $\frac{1}{2}$ ,  $\frac{2}{3}$ ,  $\frac{1}{6}$ ,  $\frac{5}{8}$
- B.  $\frac{2}{3}$ ,  $\frac{1}{2}$ ,  $\frac{1}{6}$ ,  $\frac{5}{8}$
- C.  $\frac{1}{6}$ ,  $\frac{5}{8}$ ,  $\frac{1}{2}$ ,  $\frac{2}{3}$
- D.  $\frac{1}{6}$ ,  $\frac{1}{2}$ ,  $\frac{5}{8}$ ,  $\frac{2}{3}$

2) Tom has \$105.00 in his wallet. He buys a sandwich for \$3.90 and returns \$50.00 to Sam he borrowed a month ago. How much money does Tom have left?

- A. \$96.10
- B. \$49.10
- C. \$51.10
- D. \$31.10

3) Joe has two job offers. Job "A" pays \$475.00 per week and job "B" pays \$12.50 per hour. In a 40-hour work week, which job pays more and by how much?

- A. job "A" \$25.00 per week more
- B. job "A" \$125.00 per week more
- C. job "B" \$25.00 per week more
- D. job "B" \$125.00 per week more

4) Mark is earning \$12.00 per hour. He worked from 7:00 A.M. to 11:45 A.M. How much did Mark earn?

- A. \$45.00
- B. \$50.00
- C. \$57.00
- D. \$69.00

5) George averages a speed of 55 miles per hour while driving. It took George 4 hours to travel from San Francisco to Eureka. How many miles was the trip?

- A. 200 miles
- B. 220 miles
- C. 275 miles
- D. 295 miles

6) A room measures 25 feet by 30 feet. Carpet costs \$2.00 per square foot. The owner has saved \$1,350.00 for the new carpet. Which of the following statements is true?

- A. The owner is short \$250.00.
- B. The owner is short \$150.00.
- C. The owner has just enough money.
- D. The owner has \$150.00 extra.

7) Jerry puts \$125.00 into his savings account every month. He is saving for a new computer which will cost him \$1,800.00. How many months must Jerry save until he can purchase the computer?

- A. 13 months
- B. 15 months
- C. 16 months
- D. 18 months

8) A truck carries 7 cubic yards per load. The excavation will require that 53 cubic yards be hauled to the dump. How many loads will be required?

- A. 6 loads
- B. 7 loads
- C. 8 loads
- D. 9 loads

9) A painter needs to paint a 2,500 square foot wall. The paint will cover 135 square feet per gallon. How many 5-gallon cans of paint will be needed?

- A. 3 cans
- B. 4 cans
- C. 5 cans
- D. 6 cans

10) Put the following numbers in increasing order: 0.750,  $\frac{1}{2}$ ,  $\frac{1}{6}$ , 0.333

- A.  $\frac{1}{6}$ , 0.333,  $\frac{1}{2}$ , 0.750
- B. 0.333,  $\frac{1}{6}$ ,  $\frac{1}{2}$ , 0.750
- C. 0.333,  $\frac{1}{2}$ ,  $\frac{1}{6}$ , 0.750
- D. 0.750,  $\frac{1}{2}$ , 0.333,  $\frac{1}{6}$

11) What is  $4\frac{1}{2}$  subtracted from 5.33?

- A. 0.43
- B. 0.53
- C. 0.83
- D. 1.08

12) What is the average of the following numbers? 5, 15, 20, 40

- A. 15.5
- B. 20
- C. 25
- D. 30

13) Which of the following is the smallest number?

- A. 789.0
- B. 0.0789
- C. 0.7890
- D. 7.089

14) Which of these number sentences is true?

- A.  $234 > 236$
- B.  $10 + 6 = 18$
- C.  $2002 < 1998$
- D.  $10 \div 2 = 5$

15) If George used the numbers 8 and 2 which resulted in the answer 4, which operation did George use?

- A. +
- B. -
- C.  $\div$
- D.  $\times$

16) Six bolts are needed at each beam joint. If there are seven joints, how many bolts are required?

- A. 13
- B. 42
- C. 21
- D. 24

17) At the hardware store, Joe bought a saw for \$18.50, a saw blade for \$3.25 and a hammer for \$9.50. The prices include sales tax. How much money did Joe pay for the tools?

- A. \$31.00
- B. \$31.25
- C. \$31.50
- D. none

18) Which of these groups of numbers shows counting by three?

- A. 172, 169, 166, 163
- B. 2, 4, 6, 8
- C. 124, 130, 136, 142
- D. 925, 930, 935, 940

19) If  $x$  is the same number in both equations, which of these statements is true?

- A. if  $5 + x = 10$ , then  $10 - x = 6$
- B. if  $7 + x = 14$ , then  $14 - x = 7$
- C. if  $2 + 9 = x$ , then  $x - 5 = 7$
- D. if  $10 - x = 8$ , then  $x + 2 = 8$

20) Bill uses 2 packages of screws each day. He works 3 days a week and there are 20 screws in each package. How many screws does Bill use in a week?

- A. 60
- B. 80
- C. 120
- D. 140

21) What does the 3 in 1,322 mean?

- A. 3
- B. 30
- C. 300
- D. 3000

22) Which number sentence does not have an answer of 5 when you solve it?

- A.  $7 - 2 = x$
- B.  $5 \times 1 = x$
- C.  $3 + 2 = x$
- D.  $3 \div 2 = x$

23) What operation sign goes in the box to make this number sentence true?

$$5 \square 5 = 25$$

- A.  $\times$
- B.  $\div$
- C. -
- D. +

Review the following budget and answer questions 24-28

### Smith Construction's Budget

<i>Income</i>	<i>January</i>	<i>February</i>	<i>March</i>	<i>April</i>	<i>May</i>	<i>June</i>
Boulder School	\$50,000	\$30,000	\$20,000	\$25,000	\$30,000	\$10,000
River Bridge	\$50,000	\$20,000	\$20,000	\$30,000	\$25,000	\$15,000
Total Income	\$100,000	\$50,000	\$40,000	\$55,000	\$55,000	\$25,000
<i>Expenses</i>	<i>January</i>	<i>February</i>	<i>March</i>	<i>April</i>	<i>May</i>	<i>June</i>
Labor	\$10,000	\$15,000	\$12,000	\$17,000	\$15,000	\$15,000
Equipment	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000
Materials	\$15,000	\$5,000	\$10,000	\$10,000	\$15,000	\$5,000
Subcontracts	\$30,000	\$20,000	\$25,000	\$20,000	\$15,000	\$10,000
Total Expenses	\$60,000	\$45,000	\$52,000	\$52,000	\$50,000	\$35,000

24) At the end of 6 months what will be the total profit of Smith Construction?

- A. \$31,000
- B. \$3,000
- C. \$5,000
- D. \$10,000

27) What is Smith Construction's monthly average labor expense?

- A. \$12,000
- B. \$15,000
- C. \$14,000
- D. \$14,500

25) How many months will Smith Construction have a positive profit?

- A. 1 Month
- B. 2 Months
- C. 3 Months
- D. 4 Months

28) Which month is the most profitable?

- A. January
- B. February
- C. March
- D. April
- E. None of these

26) What is Smith Construction's total income for 6 months?

- A. \$225,000
- B. \$325,000
- C. \$375,000
- D. \$400,000

Review the following table and answer questions 29-33

Age	Total Weight	No. of Students
10	330	3
11	250	2
12	115	1
13	520	4
14	400	3
15	310	2

29) How many students were weighed?

- A. 3
- B. 13
- C. 15
- D. 17

30) What is the average weight of 13-year-old students?

- A. 120 lbs
- B. 125 lbs
- C. 130 lbs
- D. 140 lbs

31) What was the average weight of all students?

- A. 118.33 lbs
- B. 123.33 lbs
- C. 128.33 lbs
- D. 128.00 lbs.

32) How old are the lightest students?

- A. 10
- B. 11
- C. 12
- D. 13

33) How old are the heaviest students?

- A. 12
- B. 13
- C. 14
- D. 15

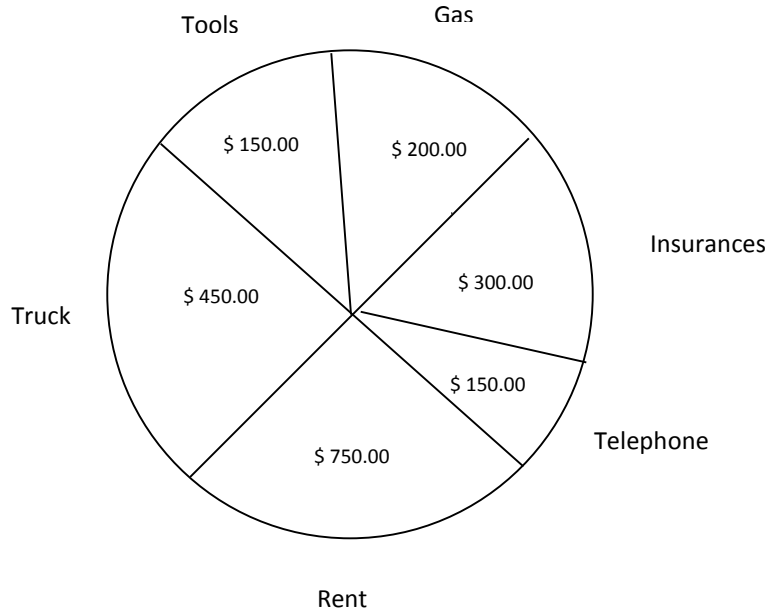
**Review the following rental schedule and answer questions 34-37**

Four County Rentals		
<i>Office Hours Monday – Friday 8:00AM – 5:00PM</i>		
Power Saw	\$15.00 per day	\$60.00 per week
Compactor	\$45.00 per day	\$200.00 per week
Tractor	\$50.00 per day	\$225.00 per week

- 34) A contractor wants to rent a power saw for 3 days. How much will it cost?  
A. \$60.00  
B. \$75.00  
C. \$45.00  
D. \$30.00
- 35) A contractor rented a compactor and tractor for 1 day. He paid with a \$100 bill. How much change did he receive?  
A. \$15.00  
B. \$10.00  
C. \$5.00  
D. \$0.00
- 36) A contractor needs a tractor for 4 days. How much more will it cost him to keep it for a week?  
A. \$50.00  
B. \$25.00  
C. \$0.00  
D. \$20.00
- 37) A contractor wants to rent a saw for 3 days and a tractor for 2 weeks. What is the total rental cost?  
A. \$480.00  
B. \$465.00  
C. \$495.00  
D. \$295.00



This circle graph shows how an electrician spends the \$2,000.00 that it costs him to run his business each month. Study the graph. Then answer questions 38 – 40.



38) How many months does it take the electrician to pay for a new \$450.00 saw?

- A. 1 month
- B. 2 months
- C. 3 months
- D. 4 months

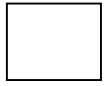
39) The electrician wants to find a cheaper shop to rent in order to double his tool allowance. How much can he spend on rent?

- A. \$750.00
- B. \$600.00
- C. \$450.00
- D. \$300.00

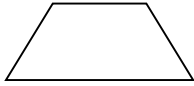
40) What fraction of the electrician's monthly expenses is spent on vehicles including gas?

- A. \$650.00
- B.  $\frac{13}{100}$
- C.  $\frac{9}{40}$
- D.  $\frac{13}{40}$

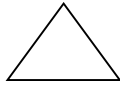
41) Which of these figures is incorrectly named?



A. Square



B. Trapezoid

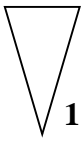
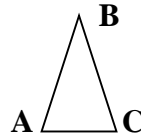


C. Triangle

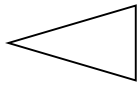


D. Hexagon

42) Which of these figures are similar to figure ABC?



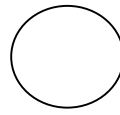
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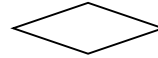
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3



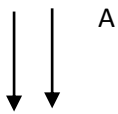
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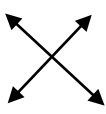
5

- A. figures 1 and 3
- B. figures 2 and 5
- C. figures 1 and 2
- D. figures 1, 2 and 5

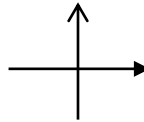
43) Which set of lines are parallel?



A



B

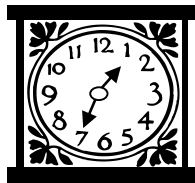


C

- A. A
- B. B
- C. C
- D. B & C

44) What time will it be in 50 minutes?

- A. 2:20
- B. 2:25
- C. 2:35
- D. 2:45



45) Which group of numbers is missing from this number pattern?

7, 12, \_\_\_\_, \_\_\_\_, \_\_\_\_, 32, 37

- A. 17, 21, 27,
- B. 17, 22, 27,
- C. 16, 21, 26,
- D. 17, 23, 27,

## PART FOUR: LANGUAGE – 25 MINUTES

**For numbers 1 and 2, decide which punctuation mark, if any, is needed in the sentence.**

1) I will bend conduit if you insist, but please show me how.

- A. ?
- B. .
- C. ,
- D. none

2) Dennis the electrical instructor, has 15 students.

- A. ,
- B. ?
- C. “
- D. none

**For number 3, choose the word or phrase that best completes the sentence.**

3) When I graduate the ABC NorCal apprenticeship program, I \_\_\_\_\_ a journeyperson.

- A. will be
- B. had been
- C. am
- D. have been

**For numbers 4 and 5, choose the answer that is written correctly and shows the correct capitalization and punctuation.**

- 4)     A. Read the plans thoroughly:  
       B. I read the plans sometimes  
       C. Did you hear them talking about the plans  
       D. We were the lowest bidder for that project!
- 5)     A. Alex asked, “How much am I supposed to be making”?  
       B. “You should ask your payroll department”, said Cindy.  
       C. Deanna asked, “Who’s the main contact at your company?”  
       D. “Penny Payroll is who you should contact” replied Anne

**For numbers 6 through 8, read the underlined sentences. Then choose the best sentence that combines those sentences into one.**

6) ABC NorCal ordered pizza for the apprentices on Friday.

They ate it at lunch.

- A. ABC NorCal ordered pizza for the apprentices on Friday, or they ate it at lunch.
- B. ABC NorCal ordered pizza for the apprentices on Friday, so they ate it at lunch.
- C. ABC NorCal ordered pizza for the apprentices on Friday, for they ate it at lunch.
- D. ABC NorCal ordered pizza for the apprentices on Friday, and they ate it at lunch.

7) Sam called his new company to ask a question.

He had a question about his schedule.

- A. Sam called his new company about his schedule to ask a question.
- B. Sam called his new company to ask a question about his schedule.
- C. Sam called his company to ask a new question about his schedule.
- D. Sam called about his schedule and asked his new company a question.

8) Roy collects the attendance records every day.

Roy checks the attendance records every day.

- A. Roy collects the attendance records and checks them every day.
- B. Roy collects the attendance records every day and also then checks them.
- C. Roy collects the attendance records and also checks them every day.
- D. Roy collects the attendance records every day and checks them every day.

**For numbers 9 through 11, read the paragraph. Then choose the sentence that best fills in the blank in the paragraph.**

9) \_\_\_\_\_. Construction is one of the only fields that allow you many opportunities immediately after completing the apprenticeship program. A career in construction can also provide a profitable, satisfying career for those interested in working with their hands on a daily basis.

- A. The construction industry is booming.
- B. Working in the construction industry has its rewards.
- C. The ABC NorCal Apprenticeship Program is the best out there.
- D. Everyone working in construction is happy.

10) On-the-job training gives apprentices the opportunity to work alongside industry and craft professionals to gain practical, hands-on experience in their trade while earning a paycheck. Related supplemental instruction (also known as classroom training) provides apprentices an opportunity to study theory and practical application of the trade in classes taught by expert instructors. \_\_\_\_\_. There is no tuition fees associated with the apprenticeship program. ABC NorCal apprentices are only responsible for paying for their tools.

- A. Apprenticeship programs offer many benefits.
- B. On-the-job training is crucial to learning the trade.
- C. Working in construction has its perks.
- D. This program is essentially free to all apprentices.

11) Cindy works for ABC NorCal. She is in charge of program recruitment, orientations, wage issues, and benefit information. \_\_\_\_\_. This is her favorite part of the job.

- A. Consequently, she works one on one with apprentices regarding various issues.
- B. In addition, she works one on one with apprentices regarding various issues.
- C. As a result, she works one on one with apprentices regarding various issues.
- D. For instance, she works one on one with apprentices regarding various issues.

**For number 12, choose the answer that best develops the topic sentence.**

12) Calculating apprentice wages is confusing and difficult.

- A. Accountants work hard to make sure that every person on the jobsite is being paid correctly. If an employee is not being paid correctly, a company can be fined up to \$200 per day.
- B. There are three types of projects that apprentices can work on and each project calculates wages differently. Depending on class year, job location, and type of work, wages are based on a percentage of the journeyperson rate. The calculation can be tedious.
- C. Getting paid the right amount isn't what's most important. Safety on the jobsite should be an apprentice's main concern.
- D. Apprentice's should not be concerned with how to calculate wages. This is the responsibility of accounting and an apprentice should always trust the company.

**For numbers 13 through 16, read the passage and look at the numbered, underlined parts. Choose the answer that is written correctly for each underlined part.**

- ABC NorCal is approved to train in many counties across Northern California **(13)** including Alameda county. ABC NorCal indentures many apprentices year-round but normally has its peak season starting in the Month of April and ending in October. Although the recession did temporarily stall construction, **(15)** ABC NorCal is expecting the 2014 year to have more construction projects **(16)** starting than we experience in the past few years.
- 13) A. alameda county  
B. alameda County  
C. Alameda County  
D. Correct as it is
- 14) A. month of april  
B. month of April  
C. Month of april  
D. Correct as it is
- 15) A. expected  
B. have expected  
C. were expecting  
D. Correct as it is
- 16) A. experienced  
B. will be experiencing  
C. experiencing  
D. Correct as it is

For numbers 17 through 25, read the letter and look at the number, underlined parts. Choose the answer that is written correctly for each underlined part.

(17) February 3, 2013

Charlie Brown  
123 Main Street

(18) Livermore CA. 94551

(19) Dear charlie,

(20) An updated version of the ABC NorCal Rules and regulations Handbook has been emailed to all  
(21) apprentices with a current email address on file.

(22) Our records indicate that we dont have a current email address for you on file with our office. If you  
(23) wish to receive the current revision of the handbook prior to your next scheduled class, please contact  
(24) the ABC NorCal office with a current email address; and the handbook will be emailed to you.

(25) Sincerely,  
The ABC NorCal Apprenticeship Team

- |  |  |
|--|--|
| <p>17) A. february 3, 2013<br/>B. February, 3 2013<br/>C. February 3 2013<br/>D. Correct as it is</p> <p>18) A. Livermore, CA 94551<br/>B. livermore ca, 94551<br/>C. Livermore, ca 94551<br/>D. Correct as it is</p> <p>19) A. dear Charlie,<br/>B. Dear Charlie,<br/>C. dear Charlie,<br/>D. Correct as it is</p> <p>20) A. abc norcal rules and regulation handbook<br/>B. ABC norcal Rules and regulation handbook<br/>C. ABC NorCal Rules and Regulation Handbook<br/>D. Correct as it is</p> | <p>21) A. email Address<br/>B. Email Address<br/>C. Email address<br/>D. Correct as it is</p> <p>22) A. dont'<br/>B. don't<br/>C. do'nt<br/>D. Correct as it is</p> <p>23) A. receive<br/>B. received<br/>C. have received<br/>D. Correct as it is</p> <p>24) A. address? And<br/>B. address, and<br/>C. address and<br/>D. Correct as it is</p> <p>25) A. Sincerely:<br/>B. Sincerely<br/>C. Sincerely.<br/>D. Correct as it is</p> |
|--|--|

**Grading the exam:**

Below are the answers to the exam. Remember: you must pass each section with a 70% or better **within the time limit** to pass the exam.

**Part One: Reading Comprehension – Miss no more than 7 questions**

1) C	2) A	3) B	4) A	5) D
6) B	7) B	8) C	9) C	10) B
11) A	12) A	13) C	14) B	15) D
16) B	17) A	18) C	19) B	20) C
21) D	22) A	23) C	24) C	25) A

**Part Two: Mathematics Computation – Miss no more than 7 questions**

1) C	2) A	3) A	4) C	5) C
6) C	7) B	8) A	9) D	10) B
11) E	12) E	13) C	14) E	15) A
16) A	17) B	18) B	19) E	20) B
21) A	22) C	23) B	24) C	25) B

**Part Three: Applied Mathematics – Miss no more than 13 questions**

1) D	2) C	3) C	4) C	5) B
6) B	7) B	8) C	9) B	10) A
11) C	12) B	13) B	14) D	15) C
16) B	17) B	18) A	19) B	20) C
21) C	22) D	23) A	24) A	25) D
26) B	27) C	28) A	29) C	30) C
31) C	32) A	33) D	34) C	35) C
36) B	37) C	38) C	39) B	40) D
41) D	42) C	43) A	44) B	45) B

**Part Four: Language – Miss no more than 7 questions**

1) C	2) A	3) A	4) D	5) C
6) D	7) B	8) A	9) B	10) D
11) B	12) B	13) C	14) B	15) D
16) A	17) D	18) A	19) B	20) C
21) D	22) B	23) D	24) C	25) D

Questions? Comments? Wrong answers? Please contact us at [apprenticeship@abcnorcal.org](mailto:apprenticeship@abcnorcal.org).