

**The Loyd E. Williams
Pipe Trades Training Center**
780 Commercial Street · San Jose · California · 95112
(408) 453-6330

**Please check back in January 2018 for new application dates or visit us at
www.pipetradestraining.org**

CHARACTERISTICS OF THE TRADE:

Apprentices will be required to be in possession of a valid Driver's License and maintain a safe driving record. Apprentices shall be under supervision of a qualified journeyman at all times. The trade requires physical effort on the part of the apprentice to do climbing, crawling, pulling, lifting, crouching and working in cramped quarters. Mechanical ability and finger dexterity are very essential. Depending on the job, the work may be performed either indoors or outdoors, with the major portion of the work outdoors in semi-sheltered or unfinished buildings or in deep ditches and on high scaffolds.

SEASONAL WORK SUBJECT TO WEATHER AND ECONOMIC CONDITIONS

MINIMUM REQUIREMENTS:

1. Age: Must be at least 17 years of age to apply. Qualified applicants who are 17 years old may take the exam but will not be dispatched until they reach their 18th birthday.
2. Education: Must be a high school graduate or hold a High School Proficiency certificate or have an acceptable G.E.D. certificate or college diploma.
3. Physical: Applicant must be of such physical condition as not to place him/herself or their future co-worker in jeopardy. No physical examination is required. However, applicant must be able to perform the physical requirements of the Trade.
4. Other: Applicant may be required to pass a drug/alcohol test prior to being dispatched to an employer.

LENGTH OF APPRENTICESHIP:

The length of apprenticeship for these trades is five (5) years of on-the-job training which includes five (5) years of night school. Apprentices work during the day and attend classes two nights per week. A journeyman certificate is awarded upon successful completion of the program.

DESCRIPTION OF OCCUPATIONS

REFRIGERATION & AIR CONDITIONING MECHANICAL SERVICE:

The Refrigeration/Air Conditioning Service Mechanic is responsible for the service, repair, installation, and retrofit of all types of refrigeration equipment, from the smallest air conditioning systems to the air conditioning and refrigeration units used in hospitals, skyscrapers, research and development laboratories, supermarkets and other complex installations.

STEAMFITTING-PIPEFITTING

The Steamfitter protects our environment by properly installing piping and equipment for complex heating/air conditioning and special industrial piping systems such as semiconductor, biotechnology and power generation.

PLUMBING

The Plumber protects the health and safety of the community by providing pure water to residential, commercial and industrial buildings for drinking, cooking, washing, cleaning, manufacturing or personal use, and to remove waste water after it has served its purpose. All piping and plumbing fixtures must be installed in accordance with local plumbing codes and Board of Health requirements.

The selection of apprentices will be made on the basis of qualifications alone, without regard to sex, race, creed, color, national origin, age and disability.

The Pipe Trades Training Center

Mathematics Test Information

Below is a list of areas you are encouraged to study for the math portion of the entrance exam.

- **Whole numbers:** addition, subtraction, multiplication, and division
- **Fractions:** addition, subtraction, division, and multiplication, converting improper to proper fractions, reducing
- **Percents:** converting to/from decimals or fractions, ratios, proportions
- Know how to read a tape measure
- **Geometry:** square root, diameter, area, perimeter

Sample Questions

The following sample questions will not appear on the test. They are an example of the type of questions that might appear on the test. Calculators are not allowed during the entrance exam!

1. If your pay is \$52.00 a month, how much will you earn in a year?
2. Your grades on 5 tests were 80%, 90%, 70%, 60% and 50%. What is the average of your 5 grades?
3. A dealer bought 3 loads of coal weighing 6,242 lbs., 28,394 lbs. and 143,686 lbs. How much did he buy in all?
4. It takes 5 lbs. of cement to cover 10 square feet. How many lbs. of cement will be needed to cover a rectangular area 25 ft. by 10 ft.?
5. Two machinists operating the same lathe, work 10 hours each on a day shift and on a night shift, respectively. One man turns out 400 pieces an hour, the other 600 pieces an hour. What will be the difference in their output at the end of 30 days?
6. If it takes 5 hours to do $\frac{2}{3}$ of a job, how long will it take to complete the job?

Find the decimal equivalent to the nearest thousandths of the following:

7. $\frac{3}{4}$
8. $\frac{28}{32}$
9. $\frac{56}{64}$
10. $\frac{31}{32}$
11. $\frac{7}{64}$

12. Multiply .214 by .303
13. Multiply .014 by .0064
14. Find $12\frac{1}{2}$ % of 96 men.
15. Find $\frac{1}{2}$ of 1% of 190 tons.
16. 225 is 25% of what amount?
17. 120 is what percent of 240?
18. A truck carrying 6,750 lbs. of lead weighed 9,000 lbs. What percent of the total weight was due to the weight of the truck?
19. One customer received a 25% discount on a \$300 bill. The second customer received an 8% discount on a \$300 bill. The third customer received a 5% discount on a \$300 bill. What was the total amount discounted to the three customers?
20. A plumber sells 100 sets of bathroom fixtures at \$165.00 per set. At 16% what would his commission be?
21. A loss of \$13.50 on a washing machine represents 15% loss on the selling price. What is the selling price?
22. Find the square root of 2937.44 by the arithmetic method.
23. Find the volume of a rectangular solid 20 ft. wide, 28 ft. long and 16 ft. high.
24. Find the area of a circle that has a radius of 12 inches.
25. A company marched 48 miles in 5 days. The first day they marched 12 miles, the second day 9 miles, the third day 7 miles, the fourth day 9 miles. How many miles did they march the last day?
26. If an automobile travels 450 yards in 15 seconds, how many feet does it go in $\frac{1}{3}$ of a second?
27. How many tiles 9 inches square will be necessary to floor a room measuring 35 feet by 20 feet? (Round off to nearest tile)
28. Add the following numbers: 4,585,285 plus 792 plus 73,214.
29. 620.75 divided by .25 equals
30. A 3" pipe has an inside diameter of 3.067" and an outside diameter of 3.5". What is the thickness of the wall?

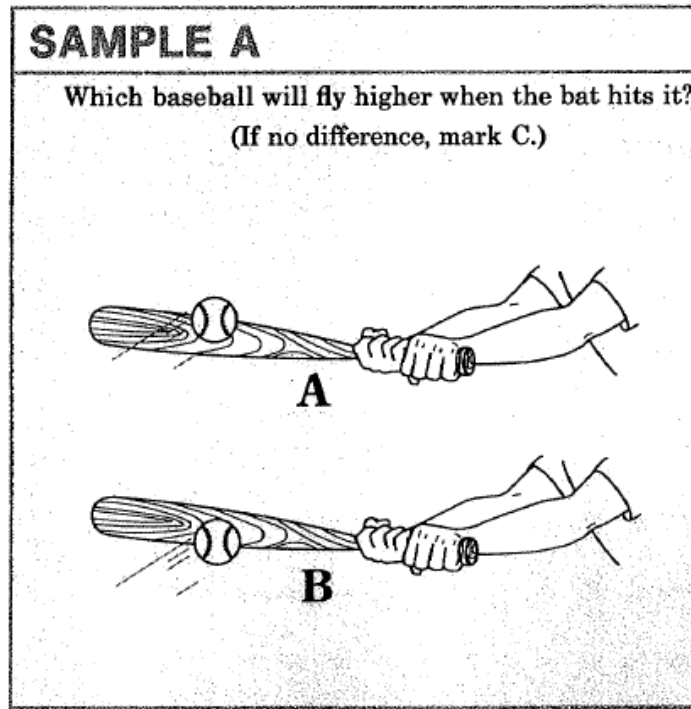
Answers:	1.	\$624.00/year	11.	.109	21.	\$90.00
	2.	70%	12.	.064842	22.	54.198
	3.	178,322 lbs. total	13.	.0000896	23.	8,960 cubic ft.
	4.	125 lbs = x	14.	12 men	24.	452.3904 sq. in.
	5.	60,000 pieces	15.	.95 tons	25.	11 mi.
	6.	7.5 hours = 1 job	16.	900 = ?	26.	30 ft.
	7.	.750	17.	50%	27.	1,244 tiles
	8.	.875	18.	25%	28.	4,659,291
	9.	.875	19.	\$114.00	29.	2483
	10.	.969	20.	\$2,640.00	30.	.2165" (1)-wall thickness

DIRECTIONS

Find the space for Mechanical Reasoning on your answer document. You are to mark all of your answers on your answer document. Do *not* write in this test booklet.

In this test, you are to read each question carefully, look at the picture or pictures, and choose which one of the three answers, A, B, or C, is the *best* answer. Then mark the space on your answer document for the answer you have chosen.

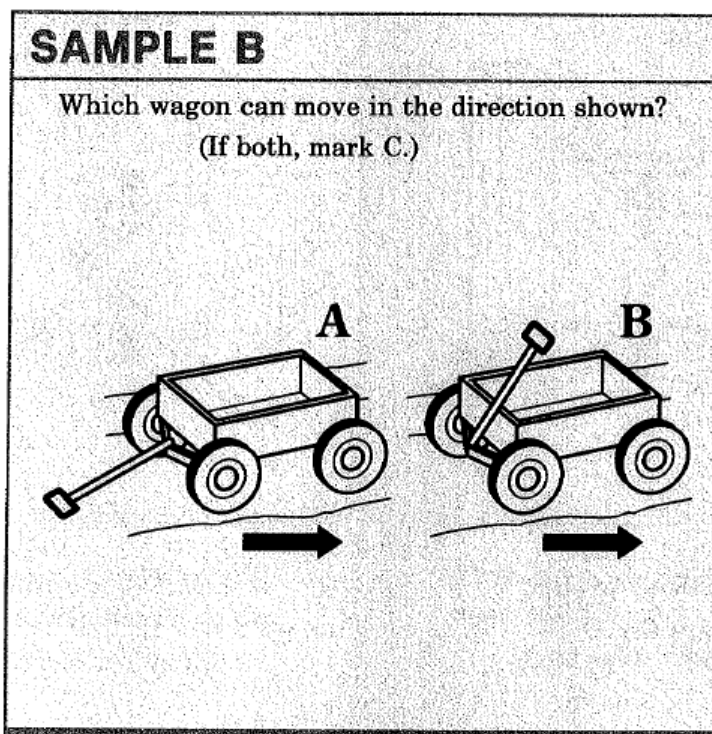
Look at *Sample A*.



Sample A shows two pictures that look similar. However, one detail is different: picture A shows the bat hitting the bottom of the baseball, and picture B shows the bat hitting the top of the baseball.

Ball A will fly higher because the bat is hitting the ball from below. Circle A for *Sample A* has been filled in on your answer document.

Look at *Sample B*.



Sample B also shows two pictures that are similar except for one detail: picture A shows a wagon with the handle down, and picture B shows a wagon with the handle up.

The answer is C. Both wagons can move in the direction shown because the handle position has no effect when the wagons move backwards. Fill in circle C for *Sample B* on your answer document.

Remember, if the question relates to two or more pictures, assume that the pictures are exactly the same except for the *one* detail that is shown to be different. Before you answer the question, look at each picture carefully and notice the one detail that is different.

If you have difficulty with a particular question, leave it and do the ones you find easier. Then, if you have time, go back to the questions you have skipped on this test only. Do *not* go on to the next test. Stop and wait for further directions.

SUGGESTED STUDY MATERIALS FOR THE MATH AND MECHANICAL REASONING TESTS

Please choose one math and one mechanical reasoning book to assist you in studying for the entrance exam. All books should be available to order online through Amazon or your local bookstore.

MATH:

1. Practical Math Success in 20 Minutes a Day, 5th Ed.
Author: LearningExpress LLC
Publisher: LearningExpress LLC
ISBN: 157685891X
2. CliffsNotes Basic Math and Pre-Algebra Practice Pack, 2nd Ed.
Author: Jonathan White
Publisher: CliffsNotes
ISBN: 0470533498
3. Schaum's Outline of Review of Elementary Mathematics, 2nd Ed.
Author: Barrett Rich
Publisher: McGraw-Hill
ISBN: 007176254X
4. The Humongous Book of Basic Math & Pre-Algebra Problems
Author: W. Michael Kelley
Publisher: ALPHA
ISBN: 1615640835
5. Basic Essentials of Math: Books 1&2
Author: James T. Shea
Publisher: Steck-Vaughn
ISBN: 0811446689 (Book 1)
0811446697 (Book 2)

MECHANICAL REASONING:

1. Master the Mechanical Aptitude and Spatial Relations Test, 7th Ed.
Author: Peterson's
Publisher: Peterson's
ISBN: 076892863X
2. Barron's Mechanical Aptitude and Spatial Relations Test, 3rd Ed.
Author: Dr. Joel Wiesen
Publisher: Barron's
ISBN: 1438005709
3. Mechanical, Spatial & Abstract Reasoning
Author: Craig MacKellar
Publisher: Vivid Publishing
ISBN: 1925209369
4. Master the ASVAB Basics, 1st Ed.
Author: Peterson's
Publisher: Peterson's
ISBN: 076892829X

Plumbers, Steamfitters & Refrigeration Fitters U.A. Local 393

Effective July 1, 2016 through June 30, 2017

Basic Apprentice

Straight Time

Basic Apprentice	*Taxable Wages	Dues Check-Off	Market Recovery	Vacation/ Holiday	Take Home
1 st Period	\$ 27.02	\$ 1.08	\$.41	\$.82	\$ 24.71
2 nd Period	30.32	1.11	.46	.92	27.83
3 rd Period	33.61	1.18	.51	1.02	30.90
4 th Period	36.91	1.23	.56	1.12	34.00
5 th Period	40.21	1.28	.61	1.22	37.10
6 th Period	43.50	1.59	.66	1.32	39.93
7 th Period	46.14	1.62	.70	1.40	42.42
8 th Period	49.43	1.68	.75	1.50	45.50
9 th Period	52.73	1.73	.80	1.60	48.60
10 th Period	59.32	1.83	.90	1.80	54.79

*Taxable Rates may vary depending on additional Part B Pension Contribution & Health & Welfare Extended Reserve Contribution

Basic Apprentice Fringes (1st through 5th Periods):

Health & Welfare	\$ 14.71
*Health & Welfare Extended Reserve	0.00
Pension	14.92
*Additional Part B Pension	0.00
SUB	0.30
Training (U.A. \$.10/Local 393 \$1.35)	1.45
Labor Management Cooperation Trust	0.10
Contract Administration	0.25
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	\$31.73

Basic Apprentice Fringes (6th through 10th Periods):

Health & Welfare	\$ 14.71
*Health & Welfare Extended Reserve	0.00
Pension	14.92
*Additional Part B Pension	0.00
SUB	0.50
Training (U.A. \$.10/Local 393 \$1.35)	1.45
Labor Management Cooperation Trust	0.10
Contract Administration	0.25
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	\$31.93