Insulating

Level Three

Module 19301

EXAMINATION PACKET

Trade Math

This packet contains the reproducible Module Examination, Answer Key, and Performance Profile Sheet(s).

STORE IN A SECURE AREA!

NATIONAL CENTER FOR CONSTRUCTION EDUCATION AND RESEARCH

Pearson Education, Inc.

Upper Saddle River, New Jersey Columbus, Ohio

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Name: _____ **Date:** _____

Social Security Number: _____

_____ 1. How many 3-foot long sections of pipe insulation are required to insulate 420 feet of pipe?

a. 100
b. 160
c. 140
d. 420

_____ 2. If there are 96 sq. ft. of insulation board per box, how many boxes are required to insulate 384 sq. ft. of wall?

a. 2
b. 4
c. 6
d. 3

_____ 3. The decimal equivalent of 3/4 is _____.

a. .25
b. .50
c. .75
d. .80

_____ 4. Three inches stated as a decimal quantity of 1 foot is _____.

a. .10
b. .25
c. .30
d. .50

_____ 5. If a supply duct is 24 inches wide and 24 inches high, how many square feet of insulation would be required to insulate a 40-foot length of duct?

a. 80 sq. ft.
b. 160 sq. ft.
c. 320 sq. ft.
d. 1720 sq. ft.

_____ 6. What is the surface area of a cone with a diameter of 6 feet and a slant height of 18 feet?

a. 678.24 sq. ft.
b. 339.12 sq. ft.
c. 169.56 sq. ft.
d. 84.78 sq. ft.

_____ 7. How many bands would be required to band a jacket on 120 feet of pipe if the bands are to be installed on 9-inch centers?

a. 120
b. 90
c. 160
d. 240

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_____ 8. If a job requires 300 pieces of 4-foot long jacket to be cut from 100-foot rolls, how many rolls of jacket will be required?

a. 33
b. 10
c 75
d. 12

_____ 9. What is the area (in sq. ft.) of a triangle that has a base of 8 feet and a height of 6 feet?

a. 24 sq. ft.
b. 48 sq. ft.
c. 60 sq. ft.
d. 72 sq. ft.

_____ 10. The measurement across the opening of a cylindrical tank is the _____.

a. radius
b. diameter
c. circumference
d. pi

_____ 11. The distance around a cylindrical duct is the _____.

a. circumference
b. radius
c. diameter
d. square footage

_____ 12. If the diameter of a tank is 8 feet, the radius would be _____.

a. 8 feet
b. 4 feet
c. 24 feet
d. 24 square feet

_____ 13. The flat top of a cylindrical tank is to be insulated. If the tank is 16 feet in diameter, what is the square footage of insulation required?

a. 182 sq. ft.
b. 8 sq. ft.
c. 48 sq. ft.
d. 201 sq. ft.

_____ 14. If a cylindrical tank has a diameter of 16 feet and the sidewall height is 20 feet, what is the square footage of the sidewall surface?

a. 32.6 sq. ft.
b. 32 sq. ft.
c. 1,004.8 sq. ft.
d. 960 sq. ft.

_____ 15. What is the boiling point of water on the Celsius scale?

a. 30°C
b. 70°C
c. 90°C
d. 100°C

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NOTE ON PERFORMANCE PROFILE TESTING

Performance Profiles are included in this Instructor's Guide in a format that can be easily photocopied for each trainee. The Profiles measure trainee competency in the tasks taught in this module.

Please note the number of tasks to be tested while teaching this module. Each trainee should be tested on the tasks listed in the Performance Profile. Before the performance testing, the instructor should brief the trainees on:

- test objectives and criteria,
- safety precautions, and
- procedures for each task to be tested.

The instructor administering the performance testing should also do the following:

- ensure that all of the needed equipment is available and operating properly;
- set up the testing stations;
- organize and administer the test in a way that allows for optimal performance;
- complete the Performance Profile Sheet for each trainee by assigning a score for each listed task;
- monitor adherence to all safety regulations and precautions;
- provide adequate supervision to prevent injuries; and
- take immediate and effective action to remedy any emergency.

ACCREDITATION TESTING

If this Performance Profile Testing is done in the National Center for Construction Education and Research Standardized Craft Training Program, the following conditions must be met:

1. The Craft Instructor must hold valid NCCER instructor certification.
2. The training must be delivered through a Training Program Sponsor recognized by the NCCER.
3. For every module, the specific performance testing must be completed to the satisfaction of the instructor.
4. The results of the testing must be recorded on the Craft Training Report Form. This form must be provided to the local Training Program Sponsor to be forwarded to the NCCER National Craft Training Registry.

Craft: Insulating

Task Module Number: 19301

Task Module Title: Trade Math

TRAINEE NAME: _____

TRAINEE SOCIAL SECURITY NUMBER: _____

CLASS: _____

TRAINING PROGRAM SPONSOR: _____

_____

INSTRUCTOR: _____

Rating Levels: 1. Passed: performed task.

2. Failed: did not perform task.

Recognition: When testing for the NCCER Standardized Craft Training Program, be sure to record Performance Profile testing results on Craft Training Report Form 200 and submit the results to the Training Program Sponsor.

TASK	RATING
1. Using a sample blueprint, use a scale ruler to convert drawing dimensions to full-size dimensions.	
2. Calculate the square footage of insulation required for various lengths of round and rectangular ductwork.	
3. Bisect a given angle.	
4. Given a temperature of 75°F, calculate the temperature in Celsius.	
5. Given a temperature of -50°C, calculate the temperature in Fahrenheit.	

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Answer Key to Module Examination

Answer	Section
1. c	3.0.0, 9.0.0
2. b	3.0.0, 9.0.0
3. c	3.2.0
4. b	3.2.0
5. c	4.2.0
6. c	4.2.0
7. c	3.0.0, 9.0.0
8. d	3.0.0, 9.0.0
9. a	4.2.0
10. b	4.1.0
11. a	4.1.0
12. b	4.1.0
13. d	4.2.0
14. c	4.2.0
15. d	6.0.0