Greater Pennsylvania Carpenter's Union Sample Test

PURPOSE

The purpose of this sample examination is to give prospective applicants a study guide.

GENERAL DIRECTIONS

This is a test to determine your ability in mathematical computation and reasoning. You are to use decimals and/or symbols as needed. Reduce all fractions to their lowest terms. Do all work directly on the test. The reverse side of each page may be used for scratch paper.

PART I - READING COMPREHENSION

Directions:

Read each passage, then choose the best answer for the question that follows the passage_

l. The early settlers of Greenland brought with them from Iceland horses, cattle, sheep, goats, and domestic hens. The most important of these animals, on the whole, were the sheep. Sheep were able to feed out all winter, as they do in America's Midwest today. Of course, it was, and still is advisable to set aside some hay for them in case of a spell of particularly bad weather.

TheSheep provided the Greenlanders with wool for their clothing and meat to eat. Sheep milk was used to make dairy product, although the Greenlanders also kept cows for this purpose.

According to the passage, travelers from Iceland settled in

A. The Americas
B. Greenland
C. The Midwest
D. None of these

2. The huge increases in the cost of oil and gas for heating have led many people to install efficient woodstoves. For those who live in the country, wood is plentiful and free. And for those who live in the city, the cost of wood is much lower than the cost of other energy sources.

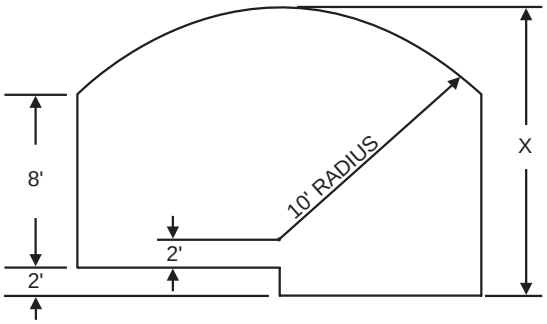
According to the passage,

A. City people cannot use woodstoves for heating
B. Woodstoves are expensive to buy
C. We are at the start of a new Ice Age
D. Many people who live in the country can get their wood for free

PART II - MECHANICAL COMPREHENSION

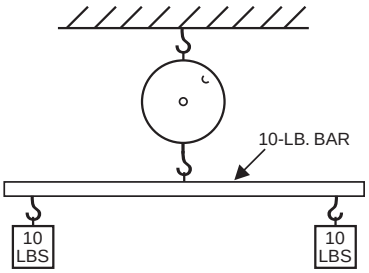
The distance "X" on the piece shown is

A. 16 inches B. 14 inches
C. 12 inches D. 10 inches



2. The reading on the weighing scale will be approximately

A. zero B. 10 lbs.
C. 20 lbs. D. 30 lbs.



PART III - PATTERN ANAYLSIS - BOX UNFOLDING TEST

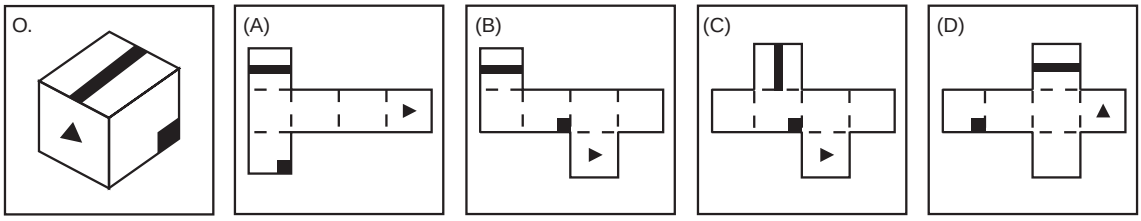
Directions:

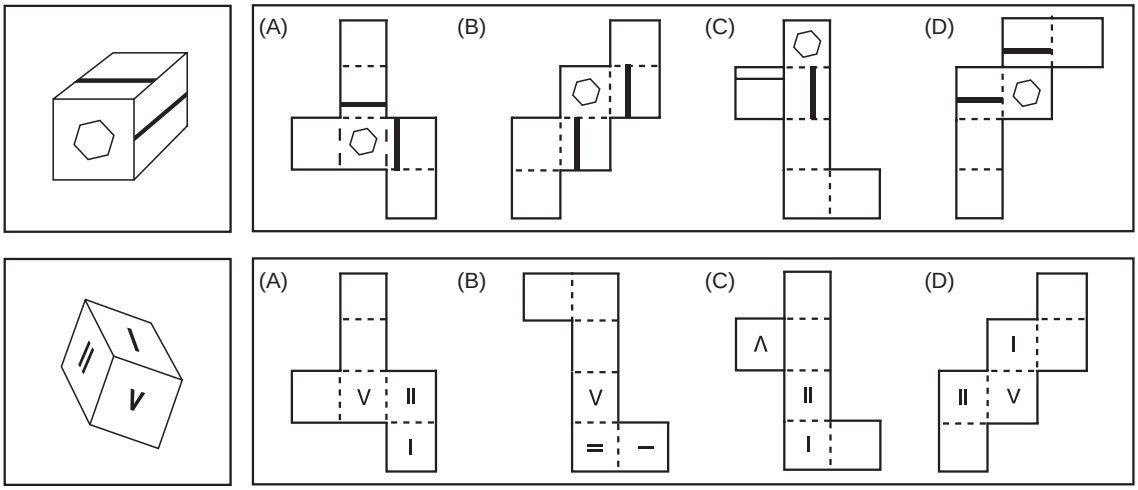
Each question in this test consists of a numbered picture showing a box that is to be unfolded. Next to each numbered box are four lettered patterns. You are to choose the only lettered pattern that could result from unfolding the box shown

A SAMPLE QUESTION IS EXPLAINED

Explanation:

Only pattern (D) could result from unfolding the box shown. In pattern (A), the stripe is in the wrong spot. In pattern (B), all three figures are incorrectly oriented. In pattern (c) the stripe goes in the wrong direction





PART IV - SERIES REASONING

The questions that follow test your ability to see between the elements of a series. Each question presents a series of letters or numbers (or both) that follows some definite order. You are asked to determine the rule that binds the elements together and then to select the next elements in the series according to that rule. The sample questions below show you typical number series questions.

1. 2 4 6 8 10 12
   A. 14
   B. 18
   C. 16
   D. 22
   E. 20

2. 7 8 6 7 5 6
   A. 2
   B. 3
   C. 4
   D. 5
   E. 7

3. 20 20 21 21 22 22 23
   A) 23 23
   B) 23 24
   C) 19 19
   D) 22 23
   E) 21 22

4. 17 3 17 4 17 5 17
   A. 6 17
   B. 6 7
   C. 17 6
   D. 5 6
   E. 17 7

5. 1 2 4 5 7 8 10
   A 11 12
   B) 12 14
   C) 10 13
   D) 12 13
   E) 11 13

Explanations:

1. In question 1, the rule is to add 2 to each, number. (2 + 2 = 4; 4 + 2 = 6; etc.) The next number in the series is 14 (12 + 2 = 14) Since letter (A) is 14, you should have circled(A) as the correct answer.

2. In question 2, the rule is to add I to the first number, subtract 2 from the next, add 1, subtract 2, and so on. The next number in the series is 4 (6-2 = 4) ; therefore (C) is the correct answer.

3. In this series each number is repeated and then increased by l. The series would be 20 + 0, 20 + 1, 21 + 1, etc. The correct answer is 23 + 0, 23 + 1, or 23 24, which is letter (B).

4. If you can't find a single rule for all the numbers in a series, see if there are really two series in the problem. This series is the number 17 separated by numbers increasing by 2, starting with 3. If the series were continued for two more numbers, it would read 17 3 17 4 17 5 17 6 17. The correct answer is (A) 6 17

5. The rule in this series is not easy to see until you actually set down how the numbers are changing: 1 + 1, 2 + 2, 4 + l, 5 + 2, 7 + 1, 8 + 2, 10. The numbers in this series are increasing first by 1 and then by 2. If the series were continued for two more numbers it would read; 1 2 4 5 7 8 10 11 13. Therefore, (E) 11 13 is the correct choice.

Hints for Answering Number Series Questions

*Do the ones that are easiest for you first. Then go back and work on the others. Enough time is allowed for you to do all the questions, providing you don't stay too long on the ones you have trouble answering.
*Sound out the series to yourself. You may hear the rule: 2 4 6 8 10 12 14...What are the next two numbers?
*Look at the series carefully. You may see the rule: 9 2 9 4 9 6 9...What are the next two numbers?
*If you can't hear it or see it, you may have to figure it out by writing down how the numbers are changing: 6 8 16 18 26 28 36...What are the next two numbers? 6 + 6 8 + 8 16 + 1 18 + 8 26 + 2 28 + 8 36... What are the next two numbers if this is + 2 + 8? 36 + 2=38+8=46 or 38 46. You would mark the letter of the answer that goes with 38 46.
*If none of the answers given fit the rule you have figured out, try again. Try to figure out a rule that makes one of the five answers a correct one.

DON'T SPEND TOO MUCH TIME ON ANY ONE QUESTION. SKIP IT AND COME BACK. A FRESH LOOK SOMETIMES HELPS.

NUMBER SERIES

Directions:

Each question consists of a series of letters or numbers (or both) that follow some definite order_ Study each series to determine what the order is. Then look at the answer choices. Circle the one answer that will complete the set in accordance with the pattern established.

l. 19 24 20 25 21 26
A. 18
B. 22
C. 23
D. 27
E. 28

2. 25 25 22 22 19 19
A. 18
B. 17
C. 16
D. 15
E. 14

3. 10 2 8 2 6 2
A. 1
B. 2
C. 3
D. 4
E. 5

4. 8 9 11 14 18 23
A. 25
B. 26
C. 27
D. 28
E. 29

PART V - COMPUTATION AND PROBLEM SOLVING

Test 1. Computational Speed

Directions:

This is a test of the speed with which you can make simple computations_ See how many of these problems you can solve.

1. 7 - 2 =
   A. 5
   B. 9
   C. 14
   D. 7

2. 5 - 0 =
   A. 0
   B. 1
   C. 5
   D. 10

3. 6 X 7 =
   A. 3
   B. 6
   C. 0
   D. 9

4. 7 + 6 =
   A. 11
   B. 13
   C. 14
   D. 21

5. 8 - 5 =
   A. 13
   B. 11
   C. 4
   D. 3

6. 6 + 8 =
   A. 2
   B. 10
   C. 12
   D. 14

7. 4 X 6 =
   A. 12
   B. 16
   C. 24
   D. 28

8. 3 + 3 =
   A. 13
   B. 24
   C. 27
   D. 42

9. 2 - 1 =
   A. 2
   B. 3
   C. 0
   D. 1

10. 4 x 10 =
    A. 4
    B. 1
    C. 16
    D. 0

11. 5 + 3 =
    A. 2
    B. 6
    C. 8
    D. 11

12. 8 - 6 =
    A. 7
    B. 2
    C. 12
    D. 14

13. 12 / 2 =
    A. 10
    B. 3
    C. 4
    D. 6

14. 4 + 6 =
    A. 12
    B. 10
    C. 3
    D. 2

15. 6 x 3 =
    A. 3
    B. 9
    C. 12
    D. 18

16. 9 + 5 =
    A. 14
    B. 4
    C. 13
    D. 16

17. 10 / 5 =
    A. 5
    B. 15
    C. 2
    D. 25

18. 2 x 9 =
    A. 18
    B. 36
    C. 16
    D. 15

PART VI - ARITHMETIC COMPUTATIONS

Directions: Read each problem carefully and select the correct answer from the choices that follow.

1. Subtract 6 3/4 from 18 1/2
   A. 10 B. 20 1/4 C. 11 1/2 D. 11 3/4

2. Multiply 31 1/2 by 5
   A. 150 B. 152 1/2 C. 157 1/2 D. 160

3. Divide 16 by 3/5
   A. 26 2/3 B. 28 1/3 C. 30 1/5 D. 32 2/5

4. Subtract $4.98 from $20
   A. $24.98 B. $22.06 C. $16.42 D. $15.02

5. Round off 97,850 to the nearest thousand
   A. 9,800 B. 9,785 C. 98,000 D. 980,000

6. Divide 17.28 by 7.2
   A. 6.8 B. 4.2 C. 2.4 D. 1.5

7. Find 5 1/2% of $2,800
   A. $140 B. $154 C. $160 D. $172

8. Add 10 1/6, 2 7/12, 7 2/3
   A. 12 1/2 B. 15 2/3 C. 18 5/6 D. 20 5/12

9. Add $84.78; $59.50; $12.43; $66.50
   A. $202.21 B. $213.31 C. $223.21 D. 242.41

10. Subtract 731,969 from 940,614
    A. 208,645 B. 218,445 C. 228,325 D. 226,324

11. Divide 9_744 by 2.4
    A. 2.08 B. 4.06 C. 3.16 D. 5.16

12. Multiply 1 1/2 by 1 I/4 by 2/3
    A. 1 I/4 B. I 3/4 C. 2 1/4 D. 2 3/4

13. Perform the indicated operation: 6 112 + 4 7/12
    A. 9 1/2 B. 10 C. 11 D. 11 1/12

14. Which one of the following is the largest real estate rate?
    A. $31.10 per $1,000 B. $4.23 per $100
    C. 32 mills per $1 D. $1.23 per $100

15. Which one of the following has the smallest value?
    A 5/8 B. .82 C. 75% D. 11/16

PART VII - ARITHMETIC REASONING

Directions:

Read each problem carefully and choose the correct answer from the choices that follow.

1. If real estate tax is $1.62 per $100 assessed valuation, the tax that must be paid on property assessed at $82,200 is closest to;
   A. $152 B. $694 C. $1086 D. $1,332

2. If FICA tax is 6.13%, the FICA tax on wages of $450.70 is closest to;
   A. $27.60 B. $27.70 C. $27.80 D. $27.90

3. The circumference of a circle is 10 Pie The area of the same circle is;
   A. 5 Pie B. 10 Pie C. 25'-f D. 100 Pie

4. A bank pays 6% interest, compounded quarterly, on savings accounts. How much interest will $300 earn in 9 months? A. $13.31 B. $13.51 C. $13.71 D. $13.91

5. A champion runner ran the 100-yard dash in three track meets. The first time, she ran it in 10.2 seconds; the second in 10.4 seconds; and the third time in 10 seconds. What was her average time?
   A. 10.2 sec. B. 10.3 sec C. 10.35 sec D 10.4 sec

6. Joshua Howard is paid a yearly salary of $18.000. His monthly paycheck shows the following deductions; federal income tax, $292.20, FICA, $91.95; state tax,$42.45; pension, $4.32. What is his yearly take-home pay?
   A. 12,828.96 B. 13,366.53 C. 25,238.42 D. 17,569.08

7. Mr. Harvey receives a salary of $300 per week plus 2% commission on sales. What were his total earnings for a week in which his sales were $5,846?
   A. $406.92 B. $416.92 C. $426.92 D. $436.92

PART VIII - MATHMATICS

Solve the following problems. Round decimals to four places and use symbols as needed.

1. 9 ft. 7 5/8 in.
   22 ft. 6 3/4 in.
   15 ft. 11 3/16 in.

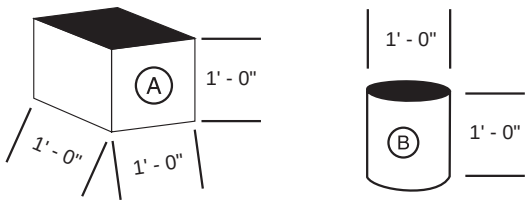
2. 28 ft. 5 3/4 in.
   -12 ft. 3 1/2 in.

3. 17 ft. 7 1/2 in.
   -14 ft. 9 7/8 in.

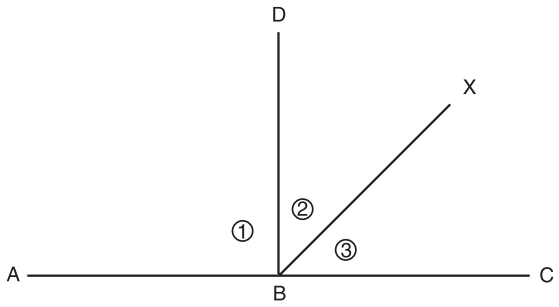
4. 16 yds. 2 ft. 9 in.
   -7 yds. 1 ft. 5 in.

5. 59° 37' 18"
   -40° 43' 22"

6. In Figure 6, which object has greater volume?
   A. _____; B _____; _____ equal

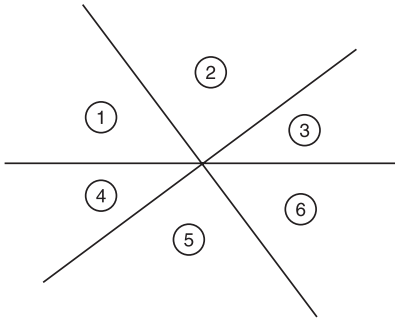


7. In Figure 7; if DB is perpendicular to AC and angle DBC is bisected by BX, how many degrees are there in angle 3?



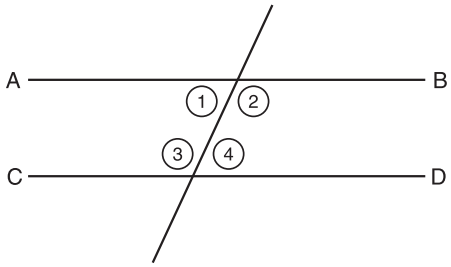
8. How many degrees are there in the sum of all angles in Figure 8?

9. In Figure 8, which angle is equal in size to angle 2?



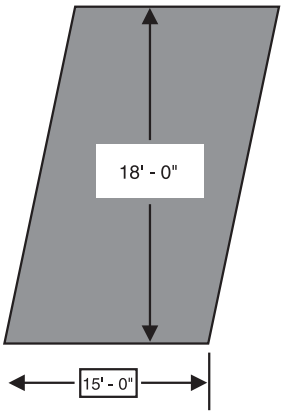
10. If angle 4 is 45° and angle 6 is 60°, in Figure 8, how many degrees are there in angle 2?

11. Lines AB and CD are parallel in Figure 9. Angle 1 is equal to angle



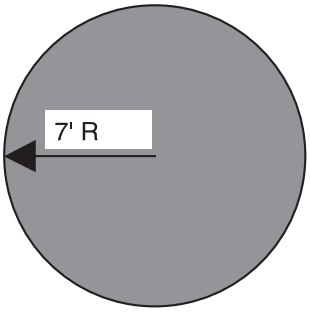
12. Angle 2 plus angle 4 in Figure 9 equals degrees.

13. If angle 1 in Figure 9 equals 75° then angle 2 + angle 3 + angle 4 equals degrees.

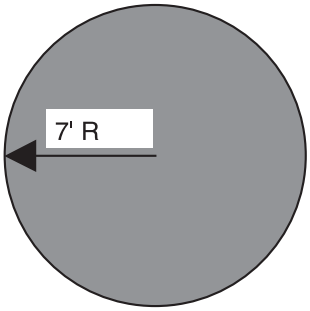


14. What is the area of Figure 10?

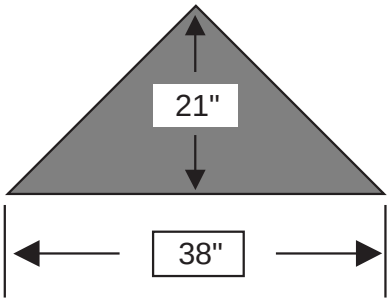
15. What is the area of Figure 11?



16. What is the circumference of Figure 11?

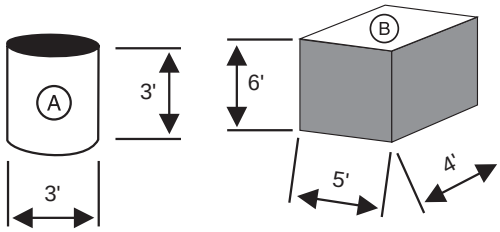


17. What is the area of Figure 12?

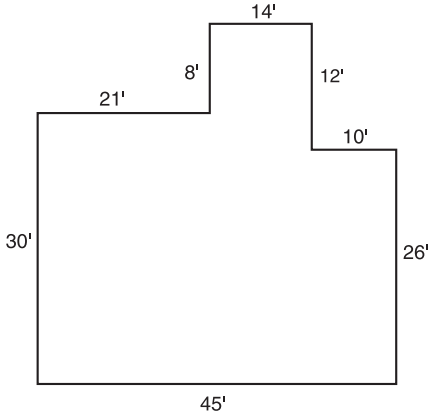


18. What is the volume of Figure 13A?

19. What is the volume of Figure 13B?



20. The perimeter of Figure 14 is _____



PART IX - MORE MATHMATICS

Determine the sum of the following angles:

1. 13º 31’ 27”, 64º 12’ 48”

Convert to feet

2. 1824”

3. 72 yards

Calculate the volume in each of the following;

4. A rectangular prism with a width of 6’ 0”, length of 9’ 0” and a depth of 5’ 0”.

5. A cylinder with a radius of 4` 0” and a height of 9’ 0”.

Multiply

6. 7 1/4 x 3 1/2

7. 11 5/8 x 6 3/4

Determine the area in each of the following;

8. Rectangle, length 21’ 0”, width 11’ 0”

9. Parallelogram, base 12’ 0”, altitude 7’ 0”

10. Triangle, base 10’ 0”, altitude 9’ 0”

11. Triangle, base 9’ 3”, altitude 5’ 6”

12. Circle, radius 7` 0”

Subtract

13. 49º 27’ 19”
-17° 39’ 27”

14. 97.32
-63.741

Change to mixed numbers

15. 19/4=

16. 27/8=

Add

17. 3/16 + 5/8 + 1/4=

18. 17.9
    27.38
  + 9.476

19. 929
     43
   +331

20. Find 81% of 547

Determine perimeter of following;

21. Square 6” sides

22. Rectangle 21” x 7”

23. Parallelogram, S=13’6” s=4”3”

24. Hexagon S=7”

25. Octagon S=2’3”

Divide

26. 96464 / 16 =

27. 1465 / .25 =

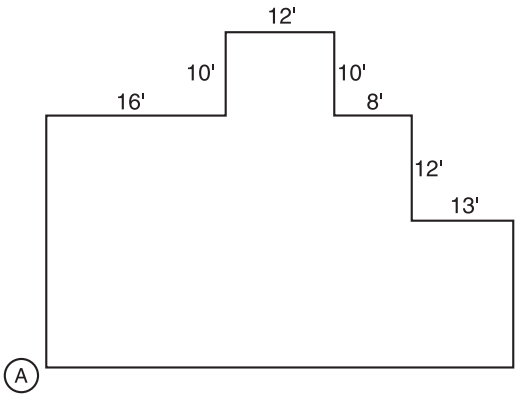
28. 20 / 7 3/4

Change fraction to a decimal (nearest hundredths)

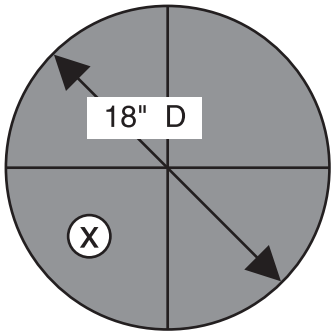
29. 5/8” =

30. 7/16 =

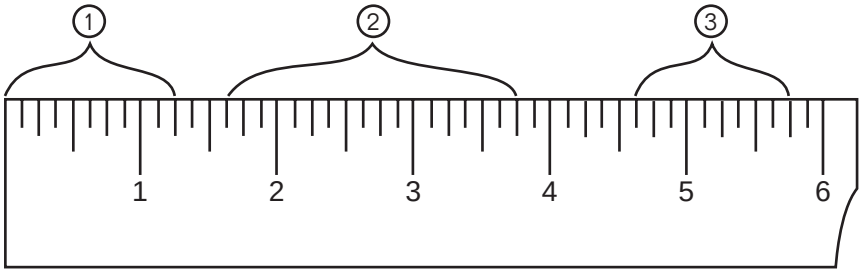
21. The distance from A to B in Figure 15 is _____



22. In Figure 17, what is the area of quadrant X?



The following four questions are based on Figure 18.



23. What is the smallest unit of measurement shown on the rule?

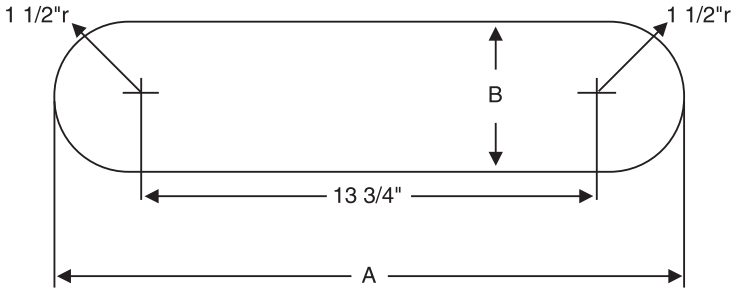
24. What is the measurement shown by bracket number 1?

25. What is the measurement shown by bracket number 2?

26. What is the sum of brackets 1 + 2 + 32

27. In Figure 19, what is the length indicated by A?

28. In Figure 19, what is the width indicated by B?



Subtract

31. 11’ 9” - 3’ 7” _

32. 27’ 4” - 9’ 8” _

Convert

33. .25 to a fraction

34. .375 to fraction (nearest 1/8”

35. .417 ft. to inches

36. 7” to decimal part of a foot

Reduce to lowest terms

37. 10/16

38. 18/32