

Philadelphia Carpenters JAC Sample Math Assessment 2021



PART I - ARITHMETIC COMPUTATIONS

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

1. Subtract $6\frac{3}{4}$ from $18\frac{1}{2}$
A. 10 B. $20\frac{1}{4}$ C. $11\frac{1}{2}$ D. $11\frac{3}{4}$
2. Divide 16 by $\frac{3}{5}$
A. $26\frac{2}{3}$ B. $28\frac{1}{3}$ C. $30\frac{1}{5}$ D. $32\frac{2}{5}$
3. Subtract \$4.98 from \$20
A. \$24.98 B. \$22.06 C. \$16.42 D. \$15.02
4. Divide 17.28 by 7.2
A. 6.8 B. 4.2 C. 2.4 D. 1.5
5. Find $5\frac{1}{2}\%$ of \$2,800
A. \$140 B. \$154 C. \$160 D. \$172
6. Add \$84.78; \$59.50; \$12.43; \$66.50
A. \$202.21 B. \$213.31 C. \$223.21 D. 242.41
7. Subtract 731,969 from 940,614
A. 208,645 B. 218,445 C. 228,325 D. 226,324
8. Divide 9.744 by 2.4
A. 2.08 B. 4.06 C. 3.16 D. 5.16
9. Multiply $1\frac{1}{2}$ by $1\frac{1}{4}$ by $\frac{2}{3}$
A. $1\frac{1}{4}$ B. $1\frac{3}{4}$ C. $2\frac{1}{4}$ D. $2\frac{3}{4}$
10. Which one of the following has the smallest value?
A. $\frac{5}{8}$ B. .82 C. 75% D. $\frac{11}{16}$

PART II - ARITHMETIC REASONING

Directions:

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

- 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
- 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
- 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
- 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

PART III - MATHEMATICS

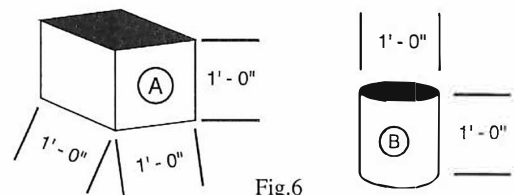
Solve the following problems. Round decimals to four places and use symbols as needed.

$$\begin{array}{r} 1. \quad 9 \text{ ft. } \quad 7 \frac{5}{8} \text{ in.} \\ \quad 22 \text{ ft. } \quad 6 \frac{3}{4} \text{ in.} \\ \quad +15 \text{ ft. } \quad 11 \frac{3}{16} \text{ in.} \\ \hline \end{array}$$

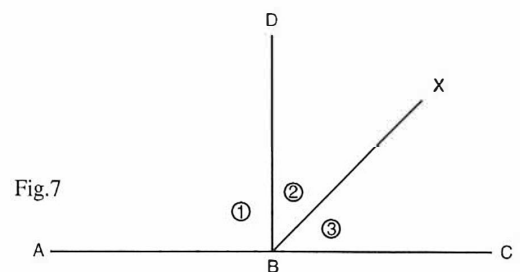
$$\begin{array}{r} 2. \quad 17 \text{ ft. } \quad 7 \frac{1}{2} \text{ in.} \\ \quad -14 \text{ ft. } \quad 9 \frac{7}{8} \text{ in.} \\ \hline \end{array}$$

$$\begin{array}{r} 3. \quad 59^\circ 37' 18'' \\ \quad -40^\circ 43' 22'' \\ \hline \end{array}$$

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



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



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

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

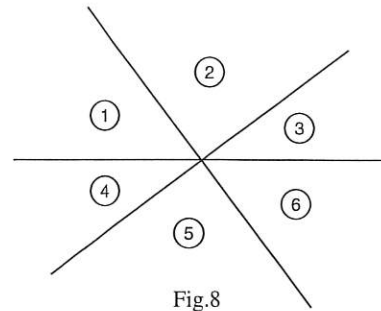


Fig.8

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

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

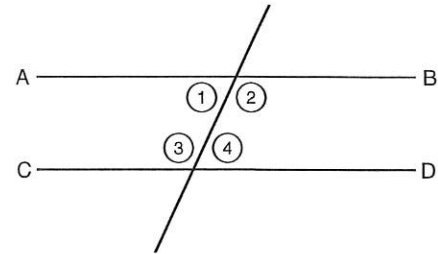


Fig.9

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

11. What is the area of Figure 10?

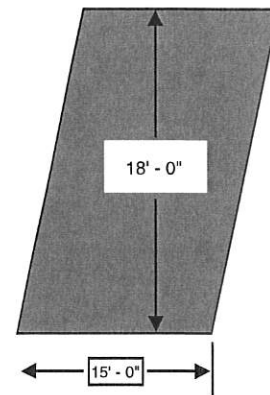


Fig.10

12. What is the area of Figure 11?

13. What is the circumference of Figure 11?

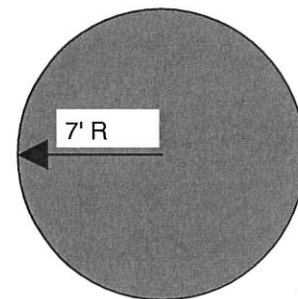


Fig.11

14. What is the area of Figure 12?

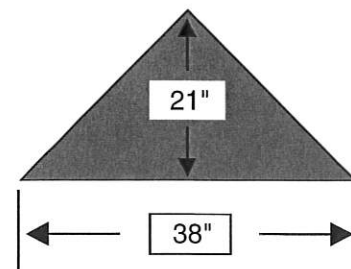


Fig.12

15. What is the volume of Figure 13A?

16. What is the volume of Figure 13B?

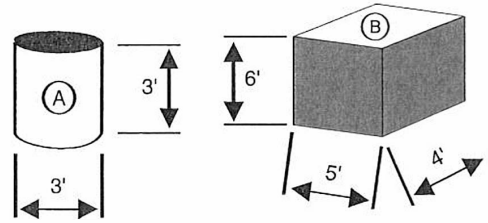


Fig.13

PART IV - MORE MATHEMATICS

Determine the sum of the following angles:

1. $13^{\circ} 31' 27''$, $64^{\circ} 12' 48''$

Convert to feet

2. 1824"

3. 72 yards

Determine the area in each of the following;

4. Rectangle, length 21' 0", width 11' 0"

5. Parallelogram, base 12' 0", altitude 7' 0"

6. Triangle, base 10' 0", altitude 9' 0"

7. Triangle, base 9' 3", altitude 5' 6"

8. Circle, radius 7' 0"

Change to mixed numbers

9. $19/4 =$

Add

10. $3/16 + 5/8 + 1/4 =$

Determine perimeter of following;

11. Square 6" sides

12. Rectangle 21" x 7"

13. Octagon $S=2'3''$

Change fraction to a decimal (nearest hundredth)

14. $5/8'' =$

15. $7/16 =$

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

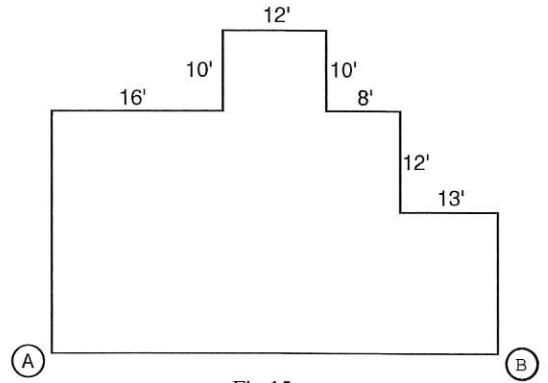


Fig.15

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

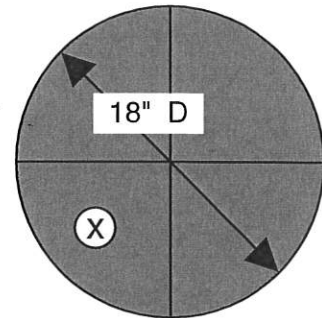


Fig.17

The following two questions are based on Figure 18.

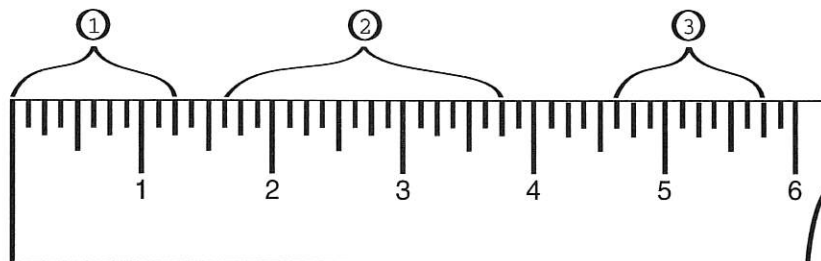


Fig.18

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

19. What is the sum of brackets 1 + 2 + 3

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

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

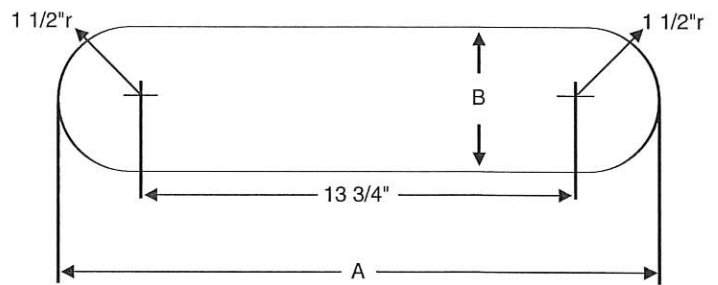


Fig.19

Convert

22. .25 to a fraction

23. .375 to fraction (nearest 1/8")

24. .417 ft. to inches

25. 7" to decimal part of a foot

Reduce to lowest terms

26. 10/16

27. 18/32