



**CURRICULUM AND INSTRUCTIONAL SERVICES
 MATHEMATICS COMMON ASSESSMENT REVIEW
 MATH APPLICATIONS 330511**

Part 3

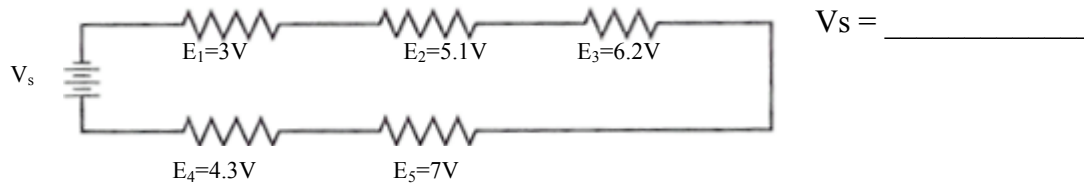
Name _____ Date _____

Show all work. Use correct units of measurement.

1. Electronics

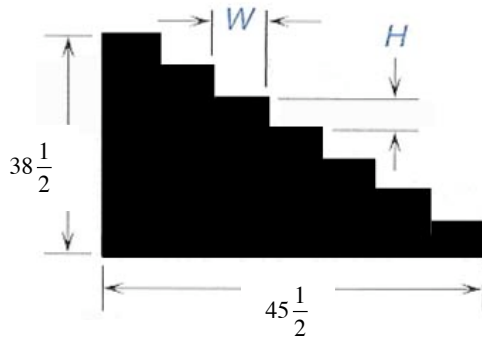
Kirchoff's law states that the sum of the voltage drops around a closed circuit is equal to the source voltage.

$V_S = E_1 + E_2 + E_3 + E_4 + E_5$. Calculate the source voltage V_S for the circuit shown.



2. Construction

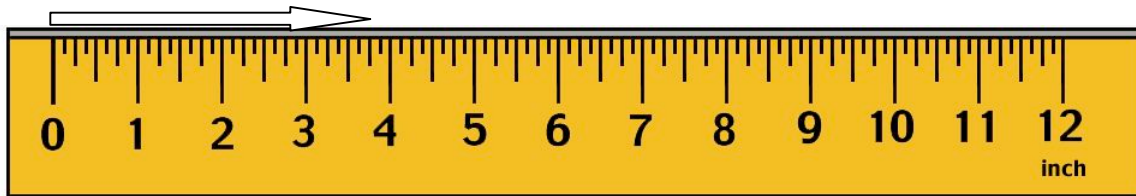
The illustration shows a stringer for a short flight of stairs. Determine the missing dimensions H and W .



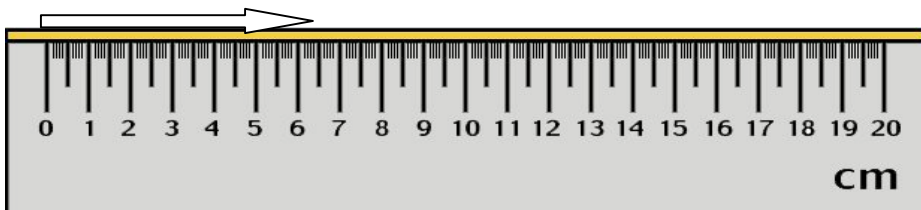
$H =$ _____

$W =$ _____

3. A) Find the length of the arrow in inches. _____ inch



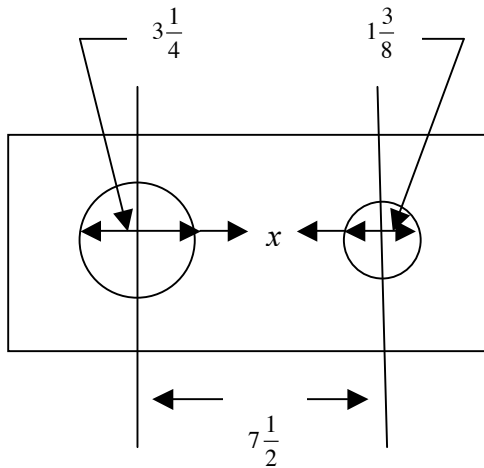
B) Find the length of the arrow in centimeters _____ cm



4. Carpentry

Find the spacing x between the holes.

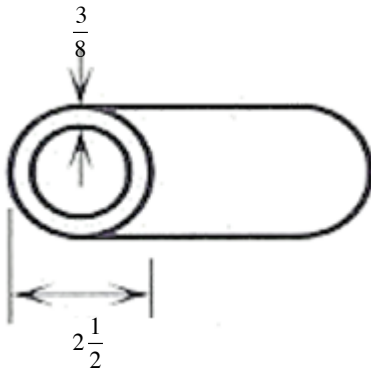
$x =$ _____



5. Electrical Trades

A piece of electrical pipe conduit has a diameter of $2\frac{1}{2}$ in. and a wall thickness of $\frac{3}{8}$ in. What is its inside diameter?

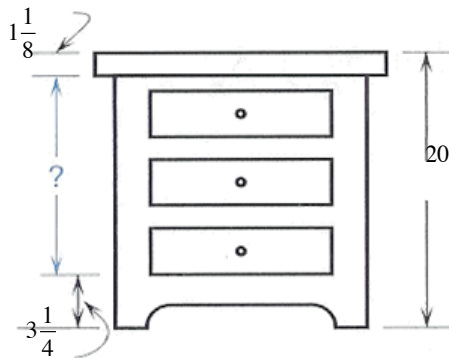
$d =$ _____



6. Carpentry

A cabinet 25 in. high must have a $3\frac{1}{4}$ in. base and a $1\frac{1}{8}$ in. top. How much space is left for drawers?

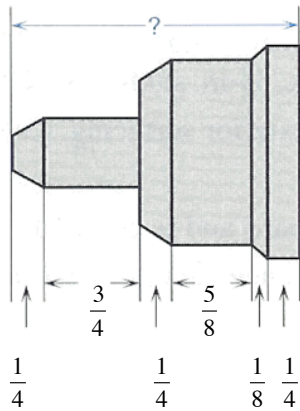
_____ in



7. **Machine Trades**

Find the total length of the metal casting shown.

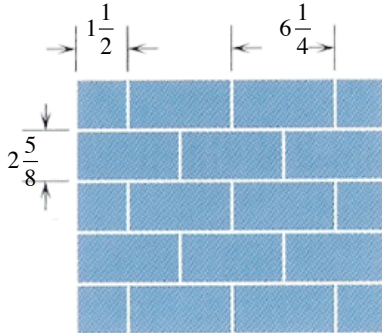
Total length _____



8. **Masonry**

Find the height of the five-course (five-bricks-high) brick wall.

Height _____

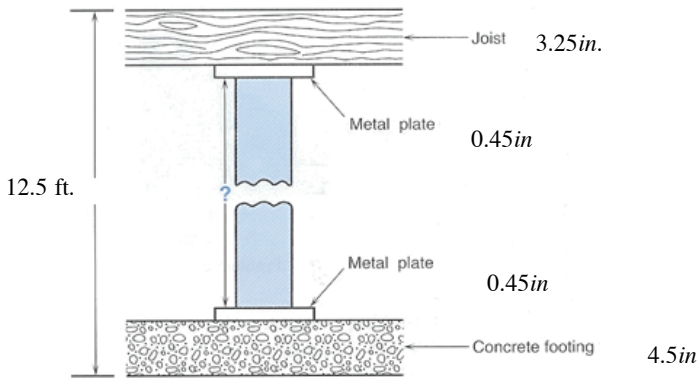


9. Solve the equation below showing all steps.

$$10x - 22 = 3(2x - 6)$$

10. Construction

A structural steel Lally column is mounted on a concrete footing as shown. Find the length of the Lally column. Length = _____



11. Fill out the register below and balance this checkbook by finding the closing balance as of November 4. (Note: You may use a calculator.)

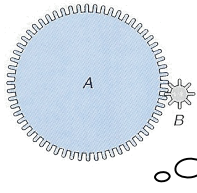
RECORD ALL CHARGES OR CREDITS THAT AFFECT YOUR ACCOUNT.

Check Number	Date	Description or Transaction	Payment/Debit (-)	✓	Fee (-)	Deposit/Credit (+)	Balance \$

Beginning Balance	\$542.83
11/01 Deposit (Payroll check – Arby’s)	195.82
11/05 Withdrawal for shopping	55.00
11/20 Check Number 586 GMAC (car loan)	243.75
11/04 Interest from October	1.22

For Problems 12 and 13 fill in the tables with the missing information.

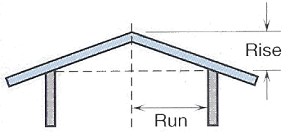
12.



Hint: Set up a proportion.

Teeth on Driving Gear A	Teeth on Driven Gear B	Gear Ratio, $\frac{A}{B}$
16		$\frac{2}{3}$
12	20	

13.



Hint: Set up a proportion.

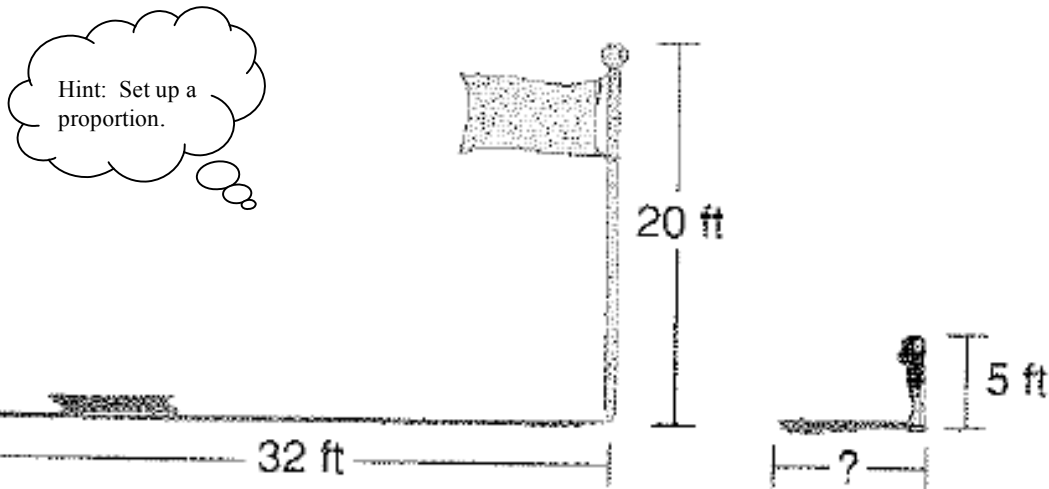
Rise	Run	Pitch $\frac{x}{12}$
15 ft.	18 ft.	
22 ft. 6 in.		5:12

14. Solve the equation below showing all steps.

$$8x - (2x - 7) = 19$$

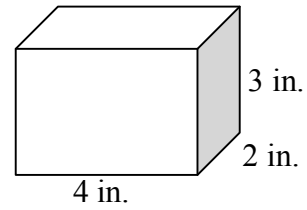
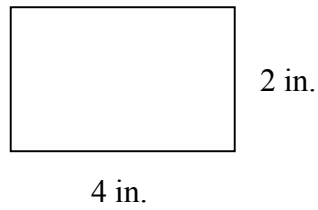
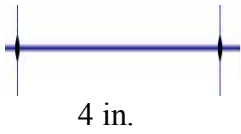
15. A 20-foot flagpole casts a shadow 32 feet long. The girl is 5 feet tall. How long is her shadow?

S= _____



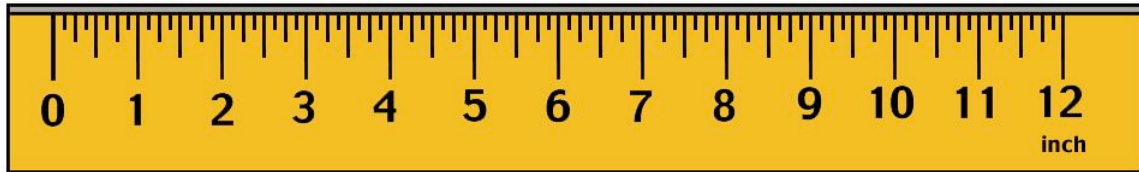
Hint: Set up a proportion.

16. What is the unit of measurement used for each of the following?



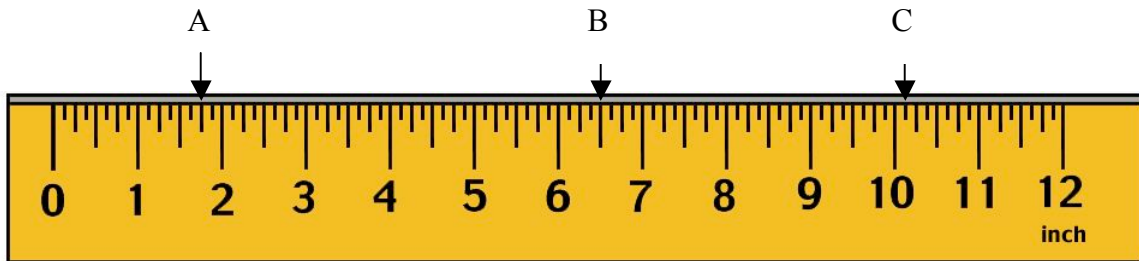
A. length _____ B. area _____ C. volume _____

17. What is the smallest fractional unit used for the ruler below? _____

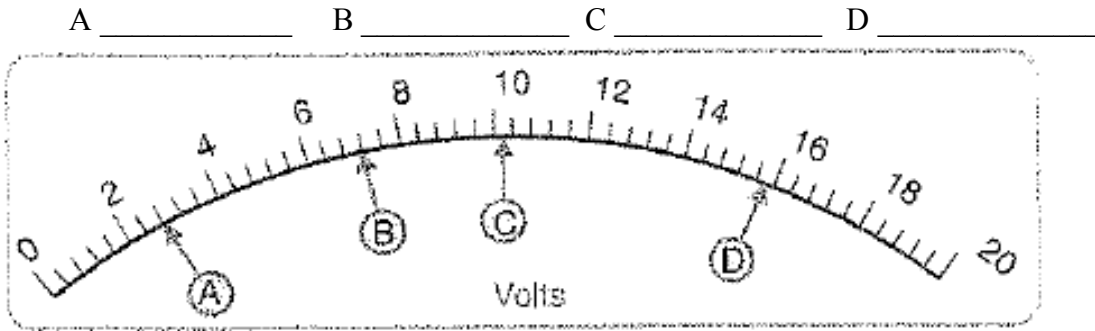


18. What is the length at each of the following points?

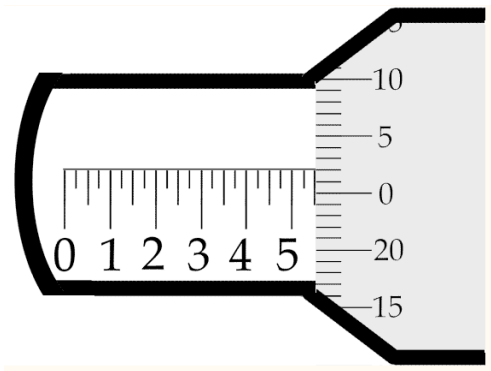
A _____ B _____ C _____



19. Read the following meter. Estimate between scale divisions where necessary.



20. Read the following micrometer: _____



21. The area of a trapezoid is $T = \frac{(A+B)H}{2}$ where A and B are the lengths of its parallel sides and H is the height.

Find the area of the trapezoid shown. A= _____

