GEOMETRY CH. 2 - BOARD PROBLEMS

DEFINE THE FOLLOWING:

1) GEOMETRY _____

2) POINT _____

3) LINE _____

4) RAY _____

5) LINE SEGMENT _____

6) HOW MANY DIMENSIONS ARE IN A:

POINT _____ LINE _____

PLANE _____ SPACE _____

7) $1\frac{3}{4} \div \frac{7}{8} =$

8) 60 IS 30% OF WHAT NUMBER?

CH. 2 PLANES & SETS

PLANE _____

TWO LINES IN THE SAME PLANE ARE _____

THE STUDY OF TWO-DIMENTIONAL SHAPES IS CALLED _____

THE STUDY OF THREE-DIMENTIONAL SHAPES _____

SETS

SET A = {1, 2, 3} SET B = {5, 6} SET C = {2, 4, 6}

SET D = {2, 3}

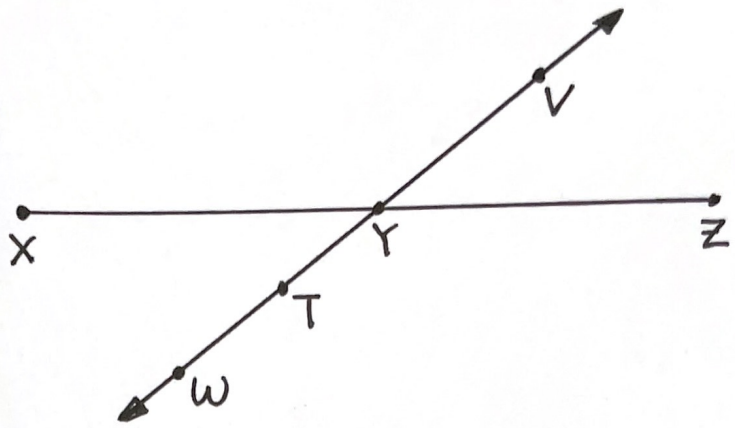
$\cup$ = UNION = _____ $A \cup B = \{$

$\cap$ = INTERSECTION = _____ $A \cap C = \{$

$\varnothing$ = NULL SET = _____ $A \cap B = \{$

$\subset$ = SUBSET = _____

IS $D \subset A$? _____



1) $\overline{XY} \cup \overline{YZ}$? _____

2) $\overrightarrow{TW} \cup \overrightarrow{TY}$? _____

3) $\overrightarrow{TW} \cap \overrightarrow{TY}$? _____

4) $\overline{XY} \cap \overline{TY}$? _____

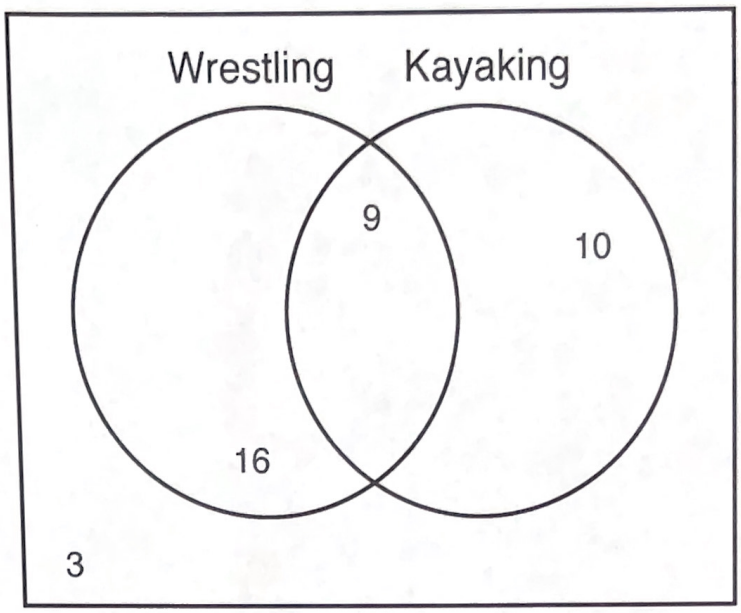
5) $\overrightarrow{YT} \cap \overrightarrow{WT}$? _____

6) $\overrightarrow{TW} \cap \overline{XZ}$? _____

7) $\overline{WT} \subset \overrightarrow{YT}$? _____

8) $\overline{YZ} \subset \overline{XZ}$? _____

Answer the Questions Based on the Venn Diagram



1) How many students do not like either Wrestling or Kayaking ? _____

2) How many students like Wrestling or Kayaking ? _____

3) How many students only like Kayaking ? _____

4) How many students only like Wrestling ? _____

5) How many students like Wrestling ? _____

6) How many students do not like both Wrestling and Kayaking ? _____

7) How many students do not like Kayaking ? _____

8) How many students like Kayaking ? _____

9) How many students like both Wrestling and Kayaking ? _____

10) How many students do not like Wrestling ? _____

LESSON PRACTICE

2A

Fill in the blanks.

1. A plane has both _____ and _____ .

2. A plane is said to be _____ dimensional.

3. Two lines that lie in the _____ plane are coplanar.

4. _____-_____ shapes are studied in plane geometry and _____-_____ shapes in solid geometry.

5. The intersection is where two or more things _____ .

6. A union is where two or more things are _____ .

7. A set is a _____ of things.

8. An empty, or _____, set means there is no possible answer.

9. A two-dimensional figure that extends infinitely in all directions is a _____ .

Match each definition to its symbol.

10. subset ∪

11. null set ⊂

12. union ∩

13. intersection ∅

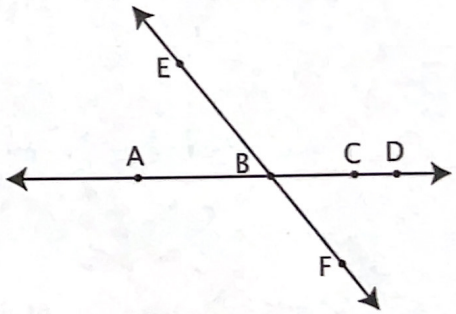
Use the drawing as necessary to tell if each statement is true or false.

14. $\overline{AB} \cup \overline{BC} = \overline{AC}$

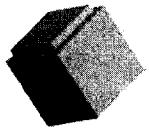
15. $\overrightarrow{BE} \cap \overrightarrow{BF} = \overleftrightarrow{EF}$

16. $\overline{AB} \cup \overline{CD} = \varnothing$

17. $\overline{BC} \subset \overleftrightarrow{BC}$



Given: $\overleftrightarrow{AD}$ and $\overleftrightarrow{EF}$ are straight lines and intersect at B.



QUICK REVIEW

Least common multiple (LCM) may be found without listing the multiples.

EXAMPLE 1 Find the LCM of 15 and 18. First list the prime factors of each number.

$15 = 3 \times 5$
$18 = 2 \times 3 \times 3$

$LCM = 2 \times 3 \times 3 \times 5 = 90$

The LCM must contain each of the factors in the original numbers. The 3 must be used twice because that is the most number of times it is used in one number.

You may check by division to see that 15 and 18 are both factors of 90.

EXAMPLE 2 Find the LCM of 12 and 25. First list the prime factors of each number. We use 2 and 5 twice as factors because they are used twice in the original numbers.

$12 = 2 \times 2 \times 3$
$25 = 5 \times 5$
$LCM = 2 \times 2 \times 3 \times 5 \times 5 = 300$

You may check by division to see that 12 and 25 are both factors of 300.

Use the factoring method to find the LCM.

1. 16 and 18

2. 10 and 14

3. 24 and 50

Use **PARA**chute **EX**pert **M**y **D**ear **A**unt **S**ally to simplify each expression.

4. $4 \cdot 8 + 3^2 =$

5. $10 \cdot 4^2 - 25 =$

6. $7^2 - 9 \div 2 =$

7. $18 \cdot 2 + 5^2 - 11 =$

8. $15 \div 3 \cdot 8 + 10 =$

9. $(-5)^2 + (9 + 4^2) =$

10. $9^2 + 48 \div 12 - 3^3$

11. $|4^2 - 9| + (8 \div 4)^2 =$

12. $|3^2 - 5^2| - (15 \div 3)^3 + 18 =$

13. $|10^2 - 5^2| + |-8 + 2^2| =$

14. $|18 - 36| + (|3 - 5^2| - 15)^2 =$

15. $|(-10)^2 - 9| - |2^4 - 5^2| =$

SYSTEMATIC REVIEW

Use the correct order of operations to simplify.

1. $4 \cdot 7 + 3^2 =$

2. $5^2 + 8 \div 2 =$

3. $12^2 \times (2 + 3) - 4 =$

4. $9 \times 1^2 - 8 =$

5. $14 \div 2 - 1 \times 6 =$

6. $6 + 28 \div 7 - 4^2 =$

7. $(-3)^2 \div 9 + 6 =$

8. $|6 \div (-2)| \times 5 + 3^2 =$

Solve.

9. $\frac{3}{8} \times \frac{2}{5} \times \frac{2}{3} =$

10. $\frac{1}{2} \times \frac{2}{3} \times \frac{3}{4} \times \frac{4}{5} =$

11. List the prime factors of 64.

12. List the prime factors of 81.

13. Reduce $\frac{32}{48}$ using the GCF.

14. Find the LCM of 24 and 36.

Find the same denominator and divide the numerators.

15. $\frac{2}{3} \div \frac{2}{7} =$

To divide, multiply by the reciprocal.

16. $\frac{2}{3} \div \frac{2}{7} =$

QUICK REVIEW

There are two ways to determine where to put the decimal in the answer, or product, when multiplying.

EXAMPLE 1

$$\begin{array}{r} .24 \\ \times\ .3 \\ \hline .072 \end{array}$$

Ignore the decimal point when multiplying, then think, "1/100 x 1/10 = 1/1000." The answer must be in thousandths and have three decimal places.

EXAMPLE 2

$$\begin{array}{r} .24 \\ \times\ .32 \\ \hline 48 \\ 72 \\ \hline .0768 \end{array}$$

Line up the decimal points when setting up the problem. After multiplying, count the total number of decimal places in the two factors and give the product the same number of decimal places as that total.

Multiply.

17. .7 x .3 =

18. 2.4 x 1.2 =

19. 1.3 x 2.1 =

20. .4 x 3.2 =

SYSTEMATIC REVIEW

Use the correct order of operations to simplify. See Lesson 1A for review of negative numbers with exponents.

1. $-4^2 + (7 - 3)^2 - |-2| =$

2. $4(10 - 3) - 5(6) + 8 \div 2 =$

3. $-19 - (7)(-2) + 6^2 =$

4. $-(A - B) + A - B =$

5. $11^2 \div 4 + \frac{2}{3} =$

6. $5 \times 3 + 4^2 - 7 + (-8 \div 4) =$

7. $-5^2 + (-5)^2 =$

8. $|(9^2 \div 9) \div 3)| =$

Solve.

9. $\frac{2}{5} \times \frac{7}{8} \times \frac{4}{7} =$

10. $\frac{5}{24} + \frac{9}{32} =$

Fill in the ovals with = (equals) or ≠ (is not equal to) and answer the questions.

11. $(3 \times 4) \times 6 \bigcirc 3 \times (4 \times 6)$

12. Is multiplication associative?

13. $10 - (8 - 6) \bigcirc (10 - 8) - 6$

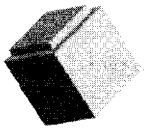
14. Is subtraction associative?

Find the same denominator and divide the numerators.

15. $1\frac{5}{7} \div 1\frac{3}{4} =$

To divide, multiply by the reciprocal.

16. $1\frac{5}{7} \div 1\frac{3}{4} =$



QUICK REVIEW

To divide decimals, first multiply both terms by the number that will make the divisor a whole number.

EXAMPLE 1

$.4\overline{)3.6}$ Multiply .4 and 3.6 by 10, then divide as usual. The decimal in the answer goes directly over the decimal below.

$4.\overline{)36.}$ 9.

EXAMPLE 2 $.35\overline{)10.50}$ 30. Both .35 and 10.5 were multiplied by 100.

Divide. If necessary, add zeros and continue dividing until you find the answer to the nearest hundredth.

17. $2.3 \div .06 =$

18. $2.5 \div .5 =$

19. $2.5 \div .05 =$

20. $1.06 \div 5.3 =$