CHAPTER 1

Chapter Standardized Test

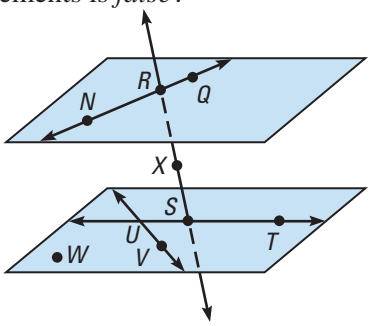
TEST-TAKING STRATEGY Work as quickly as you can through the easier sections, but avoid making careless errors on easy questions.

1. MULTIPLE CHOICE What is the next number in the sequence?

4488; 44,088; 440,088; 4,400,088; . . .

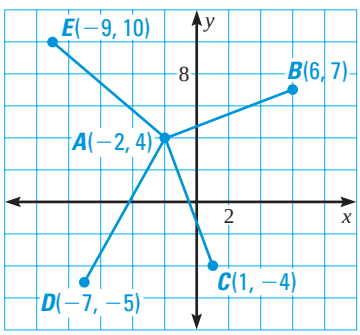
(A) 400,008 (B) 40,000,088
(C) 44,000,088 (D) 440,000,088
(E) 44,000,008

2. MULTIPLE CHOICE Which of the following statements is *false*?



(A) S, T, V, and W are coplanar.
(B) X, T, S, and U are coplanar.
(C) Q, N, and R are collinear.
(D) S, R, and X are collinear.
(E) $\overrightarrow{TS}$ and $\overrightarrow{TU}$ are opposite rays.

3. MULTIPLE CHOICE Which of the line segments shown in the coordinate plane are congruent?



(A) $\overline{AC}$ and $\overline{AE}$ (B) $\overline{AB}$ and $\overline{AE}$
(C) $\overline{AD}$ and $\overline{AC}$ (D) $\overline{AD}$ and $\overline{AB}$
(E) $\overline{AB}$ and $\overline{AC}$

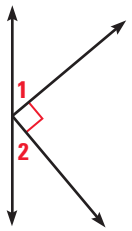
4. MULTIPLE CHOICE B is between A and C, D is between B and C, and C is between B and E. $AE = 28$, $BC = 10$, and $AB = DB = DC$. What is the length of $\overline{CE}$?

(A) 5 (B) 10 (C) 12
(D) 13 (E) 15

5. MULTIPLE CHOICE If $\angle 4$ and $\angle 5$ are complementary and $m\angle 4 = 19°$, find $m\angle 5$.

(A) 19° (B) 71° (C) 109°
(D) 161° (E) cannot be determined

6. MULTIPLE CHOICE $\angle 1$ and $\angle 2$ in the diagram are ___?___.

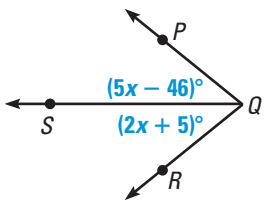


(A) complementary
(B) supplementary
(C) congruent
(D) vertical angles
(E) a linear pair

7. MULTIPLE CHOICE The midpoint of $\overline{BC}$ is $M(-10, -16)$. One endpoint is $B(-1, 8)$. What are the coordinates of C?

(A) $(-21, -40)$ (B) $(-20, -40)$
(C) $(-19, -40)$ (D) $(-21, -24)$
(E) $(8, 32)$

8. MULTIPLE CHOICE If $\overrightarrow{QS}$ bisects $\angle PQR$, find the measure of $\angle PQR$.



(A) 17°
(B) 56°
(C) 21°
(D) 39°
(E) 78°

9. MULTIPLE CHOICE Two angles are complementary and one angle has a measure that is 9 times the measure of the other angle. What is the angle measure of the larger angle?

(A) 9°
(B) 18°
(C) 81°
(D) 90°
(E) 162°

10. QUANTITATIVE COMPARISON Consider the areas of the two triangles that are described below.

COLUMN A	COLUMN B
The area of a triangle defined by $A(-6, 7)$, $B(-6, -1)$, and $C(-3, 2)$	The area of a triangle defined by $D(0, 4)$, $E(6, 4)$, and $F(6, 0)$

Choose the statement that is true.

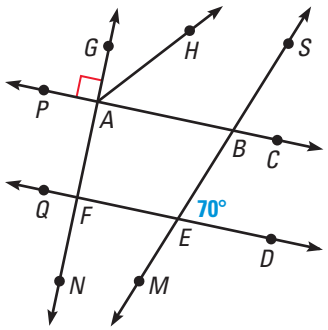
(A) The quantity in column A is greater.

(B) The quantity in column B is greater.

(C) The two quantities are equal.

(D) The relationship cannot be determined from the information given.

MULTI-STEP PROBLEM In Exercises 11–14, use the figure at the right.



11. Name an angle that is (a) acute, (b) obtuse, (c) straight, and (d) right.

12. Classify each pair of angles as *complementary*, *supplementary*, or *vertical angles*.

a. $\angle ABS$ and $\angle SBC$

b. $\angle BAH$ and $\angle GAH$

c. $\angle BEF$ and $\angle FEM$

d. $\angle ABS$ and $\angle EBC$

13. If $\overrightarrow{AH}$ bisects $\angle GAB$, find the measures of $\angle GAH$ and $\angle BAH$.

14. If $m\angle QFN = x°$, express the measures of $\angle QFA$, $\angle AFE$, and $\angle EFN$ in terms of x.

MULTI-STEP PROBLEM Consider some rectangles with a perimeter of 24 inches.

15. Copy and complete the table below.

Width (in.)	Perimeter (in.)	Length (in.)	Area (in.^{2})
1	?	?	?
2	?	?	?
3	?	?	?
4	?	?	?
5	?	?	?
6	?	?	?
7	?	?	?

16. Which rectangle in the table has the greatest area?

17. Look at the entries in the table. Describe a pattern in the widths and lengths. Use the pattern to predict the length of a rectangle with a width of 3.5 inches.

18. Make a conjecture about the dimensions of a rectangle with greatest area if the perimeter of the rectangle is known. Describe a way to test your conjecture.