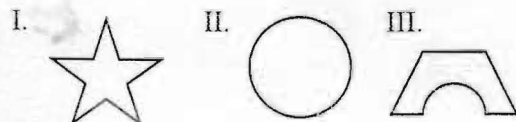


# Standardized Test Practice

For use with pages 322–328

**TEST TAKING STRATEGY** Do not panic if you run out of time before answering all of the questions. You can still receive a high test score without answering every question.

1. **Multiple Choice** Which figure below is a polygon?



- (A) I only (B) II only  
(C) III only (D) I and III  
(E) none of these

2. **Multiple Choice** A polygon with 7 sides is called a \_\_\_\_?

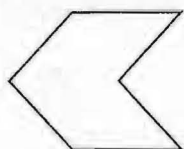
- (A) nonagon (B) dodecagon  
(C) heptagon (D) hexagon  
(E) decagon

3. **Multiple Choice** An octagon has how many sides?

- (A) 5 (B) 6 (C) 7  
(D) 8 (E) 9

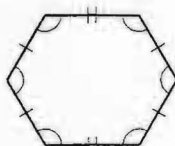
4. **Multiple Choice** The figure below is a \_\_\_\_?

- (A) convex hexagon  
(B) convex heptagon  
(C) concave heptagon  
(D) concave hexagon  
(E) concave pentagon



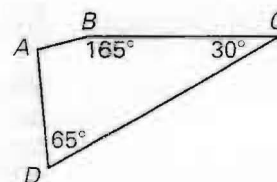
5. **Multiple Choice** The polygon below is best described as \_\_\_\_?

- (A) an equilateral pentagon  
(B) an equiangular pentagon  
(C) a regular pentagon  
(D) an equilateral hexagon  
(E) an equiangular hexagon



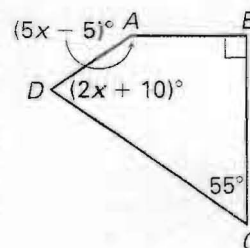
6. **Multiple Choice** Find  $m\angle A$ .

- (A)  $65^\circ$   
(B)  $135^\circ$   
(C)  $100^\circ$   
(D)  $90^\circ$   
(E)  $105^\circ$



7. **Multiple Choice** Find the value of  $x$ .

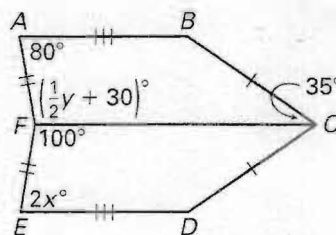
- (A) 40  
(B) 10  
(C) 45  
(D) 30  
(E) 70



8. **Quantitative Comparison** Choose the statement below that is true about the given value.

Given:  $ABCF \cong EDCF$

- (A) The value in column A is greater.  
(B) The value in column B is greater.  
(C) The two values are equal.  
(D) The relationship cannot be determined from the given information.



Column A	Column B
$x$	$y$

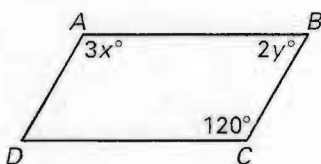
# Standardized Test Practice

For use with pages 330–337

**TEST TAKING STRATEGY** If you find yourself spending too much time on one test question and getting frustrated, move on to the next question. You can revisit a difficult problem later with a fresh perspective.

1. **Multiple Choice** Opposite angles of a parallelogram must be \_\_\_\_\_.  
 (A) complementary (B) supplementary  
 (C) congruent (D) A and C  
 (E) B and C

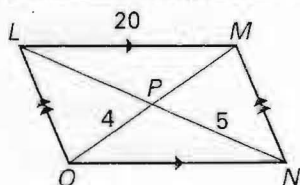
2. **Multiple Choice** What are the values of the variables in parallelogram  $ABCD$ ?



- (A)  $x = 40, y = 60$  (B)  $x = 30, y = 40$   
 (C)  $x = 60, y = 20$  (D)  $x = 20, y = 60$   
 (E)  $x = 40, y = 30$

3. **Multiple Choice** What is the length of  $\overline{LP}$ ?

- (A) 4 (B) 5  
 (C) 8 (D) 10  
 (E) 20

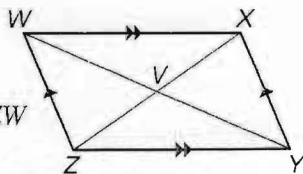


4. **Multiple Choice** In the parallelogram in Exercise 3, what is the length of  $\overline{MN}$  if the perimeter is 70 units?

- (A) 20 units (B) 15 units  
 (C) 10 units (D) 30 units  
 (E) 50 units

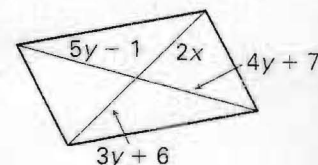
5. **Multiple Choice** Which statement is not always true about parallelogram  $WXYZ$ ?

- (A)  $\overline{WX} \cong \overline{WZ}$   
 (B)  $\overline{XY} \cong \overline{WZ}$   
 (C)  $\angle WXY \cong \angle YZW$   
 (D)  $\overline{WY} \cong \overline{XZ}$   
 (E)  $\angle WXZ \cong \angle XZY$



6. **Multiple Choice**

What are the values of  $x$  and  $y$ ?



- (A)  $x = 12, y = 6$  (B)  $x = 6, y = 12$   
 (C)  $x = 8, y = 15$  (D)  $x = 4, y = 8$   
 (E)  $x = 15, y = 8$

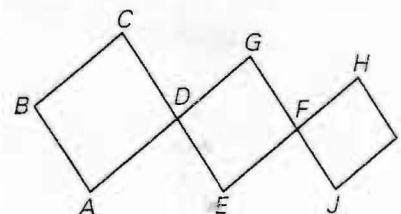
7. **Multiple Choice** Three coordinate points of a parallelogram are  $(2, 1)$ ,  $(4, 4)$ , and  $(7, 4)$ . Find the fourth vertex.

- (A)  $(5, 1)$  (B)  $(2, 7)$  (C)  $(5, 4)$   
 (D)  $(5, 7)$  (E)  $(1, 7)$

8. **Quantitative Comparison** Use the information given. Choose the statement below that is true about the given value.

- (A) The value in column A is greater.  
 (B) The value in column B is greater.  
 (C) The two values are equal.  
 (D) The relationship cannot be determined from the given information.

**Given:**  $ABCD$ ,  $DEFG$ , and  $FHIJ$  are parallelograms.



Column A	Column B
$m\angle C$	$m\angle E$

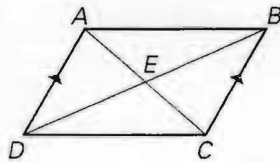
# Standardized Test Practice

For use with pages 338–346

**TEST TAKING STRATEGY** Read each test question carefully. Always look for shortcuts that will allow you to work through a problem more quickly.

1. **Multiple Choice** Which additional piece of information do you need to prove  $ABCD$  is a parallelogram?

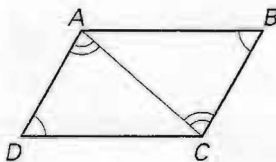
- (A)  $\overline{AB} \cong \overline{DC}$
- (B)  $\overline{AD} \cong \overline{BC}$
- (C)  $\overline{AB} \parallel \overline{DC}$
- (D) A or B
- (E) B or C



2. **Multiple Choice**  $WXYZ$  is a quadrilateral. Which information would *not* allow you to conclude that  $WXYZ$  is a parallelogram?

- (A)  $\overline{WX} \cong \overline{ZY}$ ,  $\overline{WZ} \cong \overline{XY}$
- (B)  $\angle W \cong \angle Y$ ,  $\angle X \cong \angle Z$
- (C)  $\overline{WX} \parallel \overline{ZY}$ ,  $\overline{WZ} \cong \overline{XY}$
- (D)  $\overline{WZ} \parallel \overline{XY}$ ,  $\overline{WX} \parallel \overline{ZY}$
- (E)  $\overline{WZ} \cong \overline{XY}$ ,  $\overline{WZ} \parallel \overline{XY}$

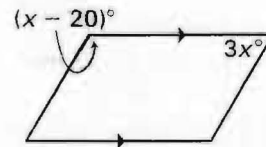
3. **Multiple Choice** To prove that  $ABCD$  is a parallelogram, you would have to first prove  $\triangle ACD \cong \triangle CAB$  using the \_\_\_\_?



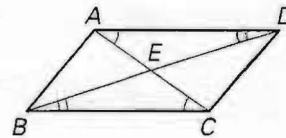
- (A) SAS Congruence Postulate
- (B) SSS Congruence Postulate
- (C) AAS Congruence Theorem
- (D) ASA Congruence Postulate
- (E) none of these

4. **Multiple Choice** What value of  $x$  will make the quadrilateral a parallelogram?

- (A) 5
- (B) 10
- (C) 50
- (D) 40
- (E) 60



5. **Multiple Choice** Given that  $\triangle AED \cong \triangle CEB$ ,  $ABCD$  would be a parallelogram because \_\_\_\_?



- (A) both pairs of opposite sides are parallel
- (B) the diagonals bisect each other
- (C) both pairs of opposite sides are congruent
- (D) both pairs of opposite angles are congruent
- (E) one angle is supplementary to both of its consecutive angles

6. **Multi-Step Problem** Consider the four points  $A(5, 4)$ ,  $B(6, 2)$ ,  $C(3, 1)$ , and  $D(8, 5)$ .

- a. Show that  $ACBD$  is a parallelogram by showing that opposite sides are parallel.
- b. Show that  $ACBD$  is a parallelogram by showing that opposite sides are congruent.
- c. Show that  $ACBD$  is a parallelogram by showing that the diagonals bisect each other. Label the intersection of diagonals  $\overline{AB}$  and  $\overline{CD}$  point  $E$ .

# Standardized Test Practice

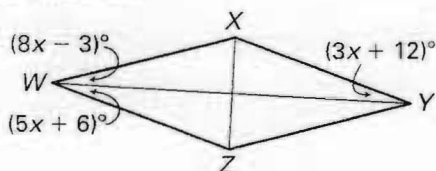
For use with pages 347–355

**TEST TAKING STRATEGY** When checking your work, try to use a method other than the one you originally used to get your answer. If you use the same method, you may make the same mistake twice.

1. **Multiple Choice** What special type of quadrilateral has the vertices  $A(-2, 1)$ ,  $B(2, -3)$ ,  $C(2, 1)$ , and  $D(-2, -3)$ ?

(A) rhombus (B) square  
(C) rectangle (D) parallelogram  
(E) none of these

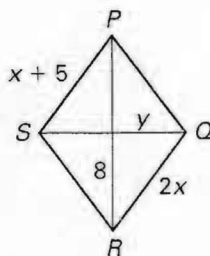
2. **Multiple Choice**  $WXYZ$  is a rhombus. What is the value of  $x$ ?



(A) 9 (B) 3 (C) 4  
(D)  $\frac{2}{3}$  (E) 1

3. **Multiple Choice** In the diagram below,  $PQRS$  is a rhombus. What are the values of  $x$  and  $y$ ?

(A)  $x = \frac{5}{3}$ ,  $y = 4$   
(B)  $x = 5$ ,  $y = 2$   
(C)  $x = 10$ ,  $y = 4$   
(D)  $x = 5$ ,  $y = 6$   
(E)  $x = 10$ ,  $y = 6$



4. **Multiple Choice** The diagonals of a rectangle must \_\_\_\_\_.  
(A) bisect each other (B) be perpendicular  
(C) be congruent (D) A and B  
(E) A and C

5. **Multiple Choice** If a quadrilateral has four equal sides, then it must be a \_\_\_\_\_.  
(A) rectangle (B) square  
(C) rhombus (D) A and B  
(E) B and C

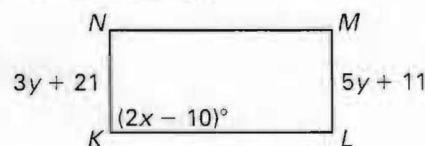
6. **Multiple Choice** In rectangle  $ABCD$ ,  $AB = \frac{1}{2}x + 6$  and  $CD = \frac{5}{2}x - 2$ . Find the value of  $x$ .

(A) 4 (B)  $\frac{3}{4}$  (C) 5  
(D) 2 (E)  $\frac{3}{2}$

7. **Multiple Choice** The perimeter of a square  $MNOP$  is 72 inches, and  $NO = 2x + 6$ . What is the value of  $x$ ?

(A) 15 (B) 12 (C) 6  
(D) 9 (E) 18

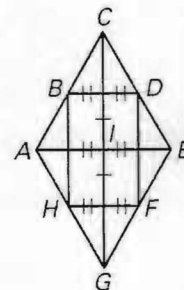
8. **Multiple Choice**  $KLMN$  is a rectangle. Find the values of  $x$  and  $y$ .



(A)  $x = 50$ ,  $y = 16$  (B)  $x = 40$ ,  $y = 5$   
(C)  $x = 40$ ,  $y = 16$  (D)  $x = 50$ ,  $y = 5$   
(E)  $x = 50$ ,  $y = 4$

## Quantitative Comparison

In the diagram,  $ACEG$  is a rhombus,  $BDFH$  is a rectangle, and  $\triangle ACE$  is an equilateral triangle. For Exercises 9 and 10, choose a statement below that is true about the given values.



- (A) The value in column A is greater.  
(B) The value in column B is greater.  
(C) The two values are equal.  
(D) The relationship cannot be determined from the given information.

Column A	Column B
9. $m\angle BAI$	$m\angle ICD$
10. $BC$	$GF$



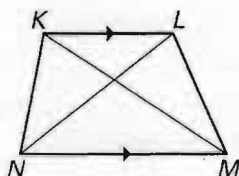
# Standardized Test Practice

For use with pages 356–363

**TEST TAKING STRATEGY** Staying physically relaxed during the SAT is very important. If you find yourself tensing up, put your pencil down and take a couple of deep breaths. This will help you stay calm.

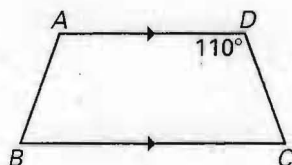
1. **Multiple Choice** In trapezoid  $KLMN$ ,  $\overline{KL}$  and  $\overline{NM}$  are \_\_\_\_\_?

- (A) legs  
(B) bases  
(C) consecutive angles  
(D) diagonals  
(E) none of these



2. **Multiple Choice** In the isosceles trapezoid  $ABCD$ , find  $m\angle B$ .

- (A)  $110^\circ$   
(B)  $55^\circ$   
(C)  $70^\circ$   
(D)  $60^\circ$   
(E)  $140^\circ$



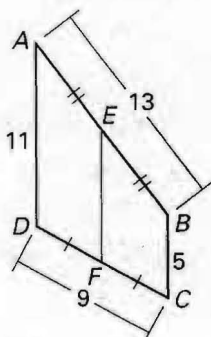
3. **Multiple Choice** Which statements below must be true if  $ABCD$  is an isosceles trapezoid with a leg  $\overline{AD}$ ?

- I.  $\overline{AB} \cong \overline{DC}$       III.  $\overline{AB} \parallel \overline{DC}$   
II.  $\overline{AD} \cong \overline{BC}$       IV.  $\overline{AD} \parallel \overline{BC}$

- (A) I and III      (B) I and IV  
(C) II and III      (D) II and IV  
(E) I, II, and III

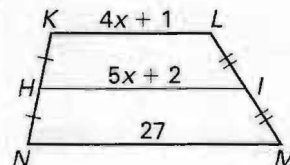
4. **Multiple Choice**  $ABCD$  is a trapezoid. Find the length of midsegment  $\overline{EF}$ .

- (A) 5  
(B) 11  
(C) 16  
(D) 8  
(E) 22



5. **Multiple Choice** Find the length of  $\overline{KL}$  in the trapezoid below.

- (A) 22    (B) 4  
(C) 13    (D) 17  
(E) 27



6. **Multiple Choice** What special type of quadrilateral has the vertices  $A(6, 3)$ ,  $B(2, 5)$ ,  $C(3, 2)$ , and  $D(5, 6)$ ?

- (A) square      (B) rectangle  
(C) rhombus      (D) trapezoid  
(E) kite

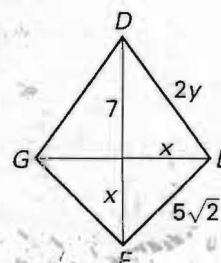
7. **Multiple Choice** The midsegment of a trapezoid is 9 cm long. What choice below is *not* a possible choice for the lengths of the bases?

- (A) 2, 16      (B) 5, 4      (C) 8, 10  
(D) 6, 12      (E) 5, 13

8. **Quantitative Comparison** In the diagram,  $DEFG$  is a kite. Choose the statement below that is true about the given value.

- (A) The value in column A is greater.  
(B) The value in column B is greater.  
(C) The values are equal.  
(D) The relationship cannot be determined with the given information.

Column A	Column B
$x$	$y$



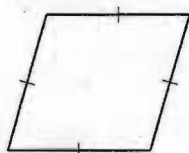
# Standardized Test Practice

For use with pages 364–370

**TEST TAKING STRATEGY** Avoid spending too much time on one question. Skip questions that are too difficult for you, and spend no more than a few minutes on each question.

1. **Multiple Choice** The quadrilateral below is most specifically a \_\_\_\_\_?

- (A) rhombus  
(B) rectangle  
(C) kite  
(D) parallelogram  
(E) trapezoid

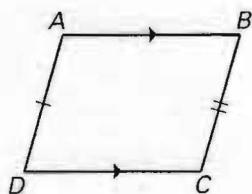


2. **Multiple Choice** A quadrilateral with at least two sides parallel and two congruent sides might be \_\_\_\_\_?

- (A) a rhombus  
(B) an isosceles trapezoid  
(C) a kite  
(D) A or B  
(E) none of these

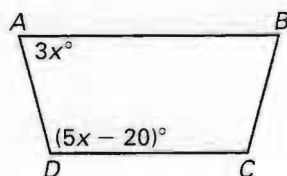
3. **Multiple Choice** What kind of quadrilateral would meet the conditions of the diagram?  $ABCD$  is not drawn to scale.

- (A) kite  
(B) rhombus  
(C) trapezoid  
(D) square  
(E) parallelogram



4. **Multiple Choice** What value of  $x$  would make quadrilateral  $ABCD$  a trapezoid?

- (A) 30 (B) 20  
(C) 25 (D) 35  
(E) 10



5. **Multiple Choice** Which statements below are always true about a rectangle?

- I. Both pairs of opposite angles are congruent.  
II. The diagonals are perpendicular.  
III. Both pairs of opposite sides are congruent.

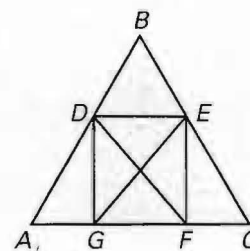
- (A) I (B) II (C) III  
(D) I and III (E) none of these

6. **Multiple Choice** Which statements below are always true about a trapezoid?

- I. Exactly one pair of opposite sides are congruent.  
II. Exactly one pair of opposite sides are parallel.  
III. The diagonals are congruent.

- (A) I (B) II (C) III  
(D) I and II (E) none of these

7. **Multi-Step Problem** In the diagram,  $DEFG$  is a rectangle and  $\triangle ABC$  is regular.



- a. If  $GE = 10y - 2$  and  $DF = \frac{2}{3}y + 12$ , find the value of  $y$ .  
b. If the midsegment of trapezoid  $DECG$  is 5 inches,  $DE = 3x + 2$ , and  $GC = 8x - 3$ , find the value of  $x$ .  
c. Prove that  $\triangle ADG \cong \triangle CEF$ .

**Standardized Test Practice**

For use with pages 372–380

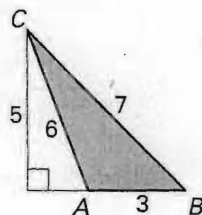
**TEST TAKING STRATEGY** One of the best ways to prepare for the SAT is to keep up with your regular studies and do your homework.

1. **Multiple Choice** Find the area of a square with a perimeter of 30 cm.

(A)  $225 \text{ cm}^2$  (B)  $15 \text{ cm}^2$   
 (C)  $30 \text{ cm}^2$  (D)  $56.25 \text{ cm}^2$   
 (E)  $60 \text{ cm}^2$

2. **Multiple Choice** Find the area of  $\triangle ABC$ .

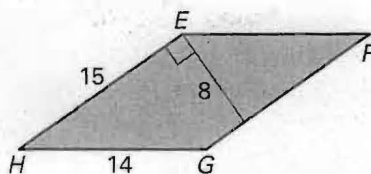
(A) 17.5 square units  
 (B) 7.5 square units  
 (C) 30 square units  
 (D) 15 square units  
 (E) 9 square units



3. **Multiple Choice** Find the base length of a triangle with an area of  $52 \text{ cm}^2$  and a height of 13 cm.

(A) 8 cm (B) 16 cm (C) 4 cm  
 (D) 2 cm (E) 26 cm

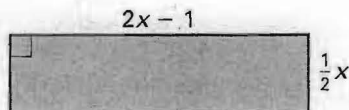
4. **Multiple Choice** Find the area of parallelogram  $EFGH$ .



(A) 75 square units (B) 112 square units  
 (C) 120 square units (D) 56 square units  
 (E) 60 square units

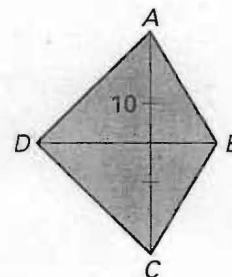
5. **Multiple Choice** The area of the rectangle is 60 square units. Find the value of  $x$ .

(A)  $\frac{2}{3}$  (B) 40  
 (C) 59 (D) 7  
 (E) 8



6. **Multiple Choice** The area of the kite is 160 square inches. Find the length of  $\overline{BD}$ .

(A) 10 in.  
 (B) 20 in.  
 (C) 8 in.  
 (D) 16 in.  
 (E) 32 in.



7. **Multiple Choice** Find the area of a trapezoid with vertices at  $A(0, 0)$ ,  $B(2, 4)$ ,  $C(6, 4)$ , and  $D(9, 0)$ .

(A) 26 square units (B) 13 square units  
 (C) 52 square units (D) 36 square units  
 (E) 18 square units

8. **Multi-Step Problem** A doll house is sketched below. There is no back to the house or roof, but there are sides to both.

- a. Find the area of the walls (including the windows and the doors).  
 b. Find the area of the window openings. The window above the door consists of 5 congruent isosceles triangles.  
 c. Find the area of the roof.

