

# Standardized Test Practice

For use with pages 194–201

**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** A triangle with three acute angles and no congruent sides is \_\_\_\_\_?

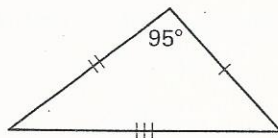
- (A) an equiangular triangle
- (B) a right triangle
- (C) an isosceles triangle
- (D) an obtuse triangle
- (E) an acute scalene triangle

2. **Multiple Choice** A triangle with side lengths of 5 cm, 3 cm, and 5 cm is \_\_\_\_\_?

- (A) an equilateral triangle
- (B) an obtuse triangle
- (C) an isosceles triangle
- (D) an acute triangle
- (E) a scalene triangle

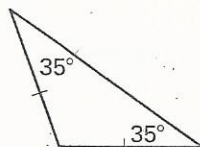
3. **Multiple Choice** The triangle below can be classified as \_\_\_\_\_?

- (A) acute isosceles
- (B) acute scalene
- (C) obtuse isosceles
- (D) obtuse scalene
- (E) right scalene



4. **Multiple Choice** The triangle below can be classified as \_\_\_\_\_?

- (A) acute isosceles
- (B) acute scalene
- (C) obtuse isosceles
- (D) obtuse scalene
- (E) right scalene

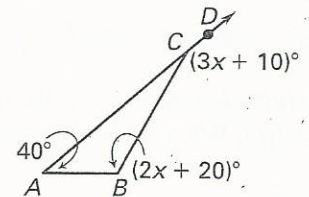


5. **Multiple Choice** An isosceles triangle has a perimeter of 82 cm. The lengths of the legs of the triangle are represented by  $(3x + 2)$  and  $(5x - 14)$ . Find the length of the base of the triangle.

- (A) 8 cm      (B) 16 cm      (C) 26 cm
- (D) 30 cm      (E) 52 cm

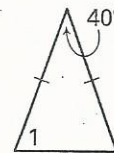
6. **Multiple Choice** Find the measure of  $\angle BCD$ .

- (A)  $50^\circ$
- (B)  $120^\circ$
- (C)  $60^\circ$
- (D)  $160^\circ$
- (E)  $20^\circ$



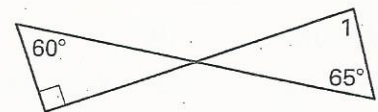
7. **Multiple Choice** Find the measure of  $\angle 1$ .

- (A)  $40^\circ$
- (B)  $70^\circ$
- (C)  $80^\circ$
- (D)  $140^\circ$
- (E) Cannot be determined



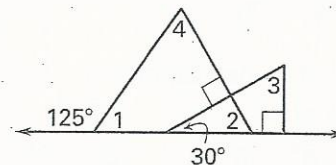
8. **Multiple Choice** Find the measure of  $\angle 1$ .

- (A)  $50^\circ$
- (B)  $90^\circ$
- (C)  $60^\circ$
- (D)  $30^\circ$
- (E)  $85^\circ$



9. **Quantitative Comparison** Choose the statement below which is true about the given number.

- (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
$m\angle 1$	$m\angle 2$

# Standardized Test Practice

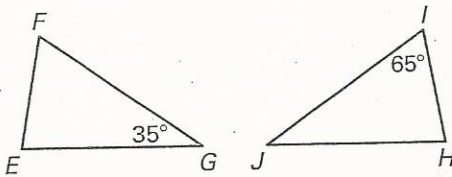
For use with pages 202–210

**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** If  $\triangle ABC \cong \triangle XYZ$ , which of the following statements below is *not* true?

- (A)  $\angle B \cong \angle Y$
- (B)  $\overline{AB} \cong \overline{XY}$
- (C)  $\angle CBA \cong \angle ZXY$
- (D)  $\overline{AC} \cong \overline{XZ}$
- (E)  $\angle BAC \cong \angle YXZ$

2. **Multiple Choice** In the diagram,  $\triangle EFG \cong \triangle HIJ$ . What is the measure of  $\angle H$ ?

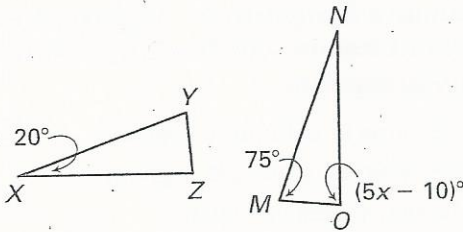


- (A)  $35^\circ$
- (B)  $65^\circ$
- (C)  $70^\circ$
- (D)  $80^\circ$
- (E) Cannot be determined

3. **Multiple Choice** In the diagram in Exercise 2,  $EG = \underline{\hspace{1cm}}?$

- (A)  $HI$
- (B)  $HJ$
- (C)  $JI$
- (D)  $FG$
- (E) Cannot be determined

4. **Multiple Choice** Given  $\angle X \cong \angle N$  and  $\angle Z \cong \angle O$ , find the value of  $x$ .

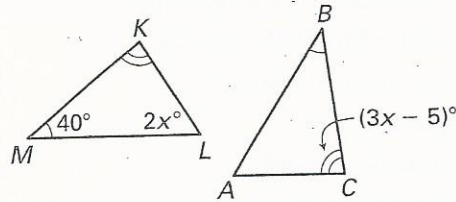


- (A) 19
- (B) 38
- (C) 95
- (D) 85
- (E) 20

5. **Multiple Choice** Use the diagram in Exercise 4 to find  $m\angle Z$ .

- (A)  $19^\circ$
- (B)  $38^\circ$
- (C)  $95^\circ$
- (D)  $-85^\circ$
- (E)  $20^\circ$

6. **Multiple Choice** Given  $\angle M \cong \angle B$  and  $\angle K \cong \angle C$ , find the value of  $x$ .

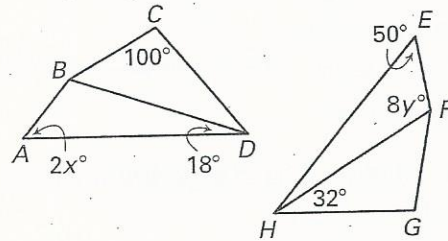


- (A) 43
- (B) 40
- (C) 82
- (D) 58
- (E) 29

**Quantitative Comparison** In Exercises 7 and 8, use the given information to find the indicated value. 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:  $ABCD \cong EFGH$



	Column A	Column B
7.	$x$	$y$
8.	$m\angle CBD$	$m\angle GHE$

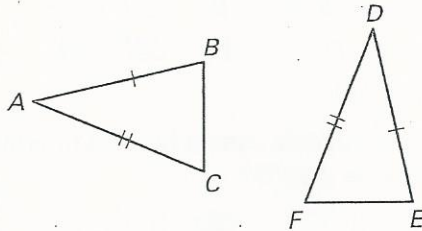


# Standardized Test Practice

For use with pages 212–219

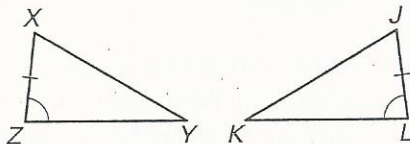
**TEST TAKING STRATEGY:** Work as quickly as you can through the easier sections, but avoid making careless errors on easy questions.

1. **Multiple Choice** Use the diagram below. Which additional congruence is needed to prove  $\triangle ABC \cong \triangle DEF$ ?



- (A)  $\angle B \cong \angle E$ ; SAS Congruence Postulate
- (B)  $\overline{BC} \cong \overline{FE}$ ; SSS Congruence Postulate
- (C)  $\angle A \cong \angle D$ ; SAS Congruence Postulate
- (D) A or B
- (E) B or C

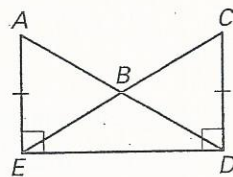
2. **Multiple Choice** Use the diagram below. Which congruence is needed to prove  $\triangle XYZ \cong \triangle JKL$ ?



- (A)  $\angle Y \cong \angle K$ ; SAS Congruence Postulate
- (B)  $\overline{XY} \cong \overline{JK}$ ; SAS Congruence Postulate
- (C)  $\overline{ZY} \cong \overline{LK}$ ; SAS Congruence Postulate
- (D) A or B
- (E) B or C

**Multiple Choice** Use the following choices to complete the proofs that  $\triangle AED \cong \triangle CDE$  and  $\triangle ABE \cong \triangle DBC$ .  
Given:  $B$  is the midpoint of  $EC$  and  $AD$ .

- (A) Given
- (B) Def. of midpoint
- (C) Reflexive Prop. of Congruence
- (D) SSS Congruence Postulate
- (E) SAS Congruence Postulate



Statements	Reasons
a. $\overline{AE} \cong \overline{CD}$	a. 3. _____
b. $\angle AED \cong \angle CDE$	b. 4. _____
c. $\overline{ED} \cong \overline{ED}$	c. 5. _____
d. $\triangle AED \cong \triangle CDE$	d. 6. _____

Statements	Reasons
e. $B$ is the midpoint of $\overline{AD}$ and $\overline{EC}$ .	e. 7. _____
f. $\overline{BC} \cong \overline{BE}$ , $\overline{AB} \cong \overline{BD}$	f. 8. _____
g. $\triangle ABE \cong \triangle DBC$	g. 9. _____

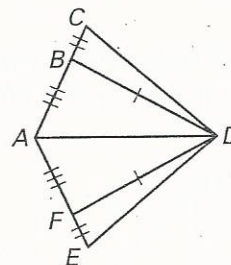
10. **Multiple Choice** In rectangle  $ABCD$ , a diagonal is drawn from  $B$  to  $D$ . Which statement is not true?

- (A)  $\angle DAB \cong \angle BCD$
- (B)  $\angle ABD \cong \angle CDB$
- (C)  $\overline{AB} \cong \overline{BC}$
- (D)  $\overline{DB} \cong \overline{DB}$
- (E)  $\angle ADB \cong \angle CBD$

11. **Multiple Choice** In  $\triangle MNO$  and  $\triangle XYZ$ ,  $\overline{MN} \cong \overline{XY}$  and  $\overline{NO} \cong \overline{YZ}$ . If the triangles are congruent, what else must be true?

- (A)  $\angle N \cong \angle Y$
- (B)  $\angle M \cong \angle Z$
- (C)  $\overline{MO} \cong \overline{XZ}$
- (D) A and C
- (E) All of the above

12. **Multi-Step Problem**



- a. Prove that  $\triangle ADF \cong \triangle ADB$ .
- b. Prove that  $\triangle ACD \cong \triangle AED$ .
- c. Prove that  $\triangle BCD \cong \triangle FED$ .

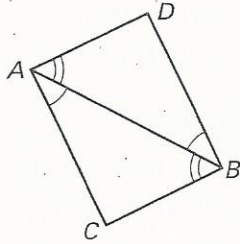
# Standardized Test Practice

For use with pages 220–227

**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.

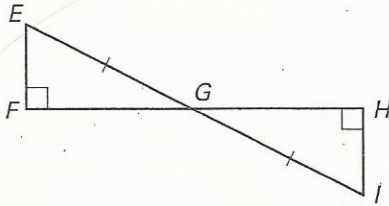
1. **Multiple Choice** Which postulate or theorem can be used to prove that  $\triangle ABC \cong \triangle BAD$ ?

- (A) SSS
- (B) SAS
- (C) ASA
- (D) AAS
- (E) none of the above



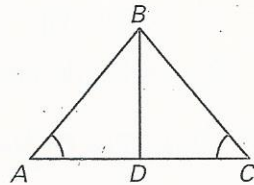
2. **Multiple Choice** Which postulate or theorem can be used to prove that  $\triangle EFG \cong \triangle IHG$ ?

- (A) SSS
- (B) SAS
- (C) ASA
- (D) AAS
- (E) none of the above



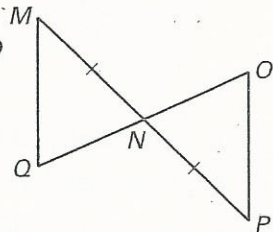
3. **Multiple Choice** What is the third congruence needed to prove that  $\triangle ABD \cong \triangle CBD$  by AAS?

- (A)  $\overline{AB} \cong \overline{BC}$
- (B)  $\angle ABD \cong \angle CBD$
- (C)  $\overline{AD} \cong \overline{DC}$
- (D)  $\angle DBA \cong \angle DCB$
- (E) B or C



4. **Multiple Choice** What is the third congruence needed to prove that  $\triangle MNQ \cong \triangle PNO$  by ASA?

- (A)  $\angle Q \cong \angle P$
- (B)  $\angle MNQ \cong \angle PNO$
- (C)  $\angle M \cong \angle O$
- (D)  $\angle M \cong \angle P$
- (E)  $\overline{QN} \cong \overline{NO}$



5. **Multiple Choice** You are given the following information about  $\triangle GHI$  and  $\triangle EFD$ .

- I.  $\angle G \cong \angle E$
- II.  $\angle H \cong \angle F$
- III.  $\angle I \cong \angle D$
- IV.  $\overline{GH} \cong \overline{EF}$
- V.  $\overline{GI} \cong \overline{ED}$

Which combination cannot be used to prove that  $\triangle GHI \cong \triangle EFD$ ?

- (A) V, IV, II
- (B) II, III, V
- (C) III, V, I
- (D) V, IV, I
- (E) none of the above

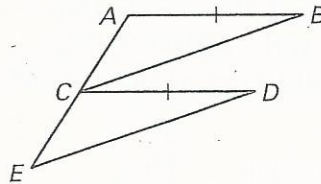
6. **Multiple Choice** Given that  $\angle X \cong \angle D$ , and  $\overline{DE} \cong \overline{XW}$ , what is the third congruence needed to prove that  $\triangle XWY \cong \triangle DEC$  by ASA?

- (A)  $\angle Y \cong \angle C$
- (B)  $\angle Y \cong \angle E$
- (C)  $\angle W \cong \angle C$
- (D)  $\angle W \cong \angle E$
- (E) none of the above

7. **Multiple Choice** Given that  $\angle G \cong \angle E$  and  $\angle I \cong \angle D$ , what is the third congruence needed to prove that  $\triangle GHI \cong \triangle EFD$  by AAS?

- (A)  $\angle H \cong \angle F$
- (B)  $\overline{HI} \cong \overline{ED}$
- (C)  $\overline{HI} \cong \overline{FD}$
- (D)  $\overline{ED} \cong \overline{GI}$
- (E) none of the above

8. **Multi-Step Problem** In the diagram,  $\overline{AB} \parallel \overline{CD}$ ,  $\overline{CB} \parallel \overline{DE}$ , and  $\overline{AB} \cong \overline{CD}$ .



- a. Prove that  $\triangle ABC \cong \triangle CDE$ .
- b. Prove that C is the midpoint of  $\overline{AE}$ .



# Standardized Test Practice

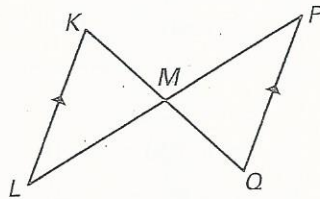
For use with pages 229–235

## TEST TAKING STRATEGY

Make sure that you are familiar with the directions before taking a standardized test. This way, you do not need to worry about the directions during the test.

1. **Multiple Choice** Which postulate or theorem can be used to prove that the triangles are congruent given  $M$  is the midpoint of  $\overline{KQ}$  and  $\overline{KL} \parallel \overline{PQ}$ ?

- (A) SSS
- (B) SAS
- (C) ASA
- (D) AAS
- (E) AAA



2. **Multiple Choice** Which statement correctly describes the congruence of the triangles in Exercise 1?

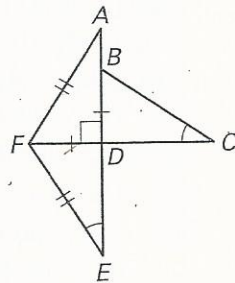
- (A)  $\triangle KML \cong \triangle PQM$
- (B)  $\triangle KLM \cong \triangle PQM$
- (C)  $\triangle KML \cong \triangle QMP$
- (D)  $\triangle KLM \cong \triangle PMQ$
- (E)  $\triangle KML \cong \triangle MQP$

3. **Multiple Choice** After proving the triangles congruent in Exercise 1, what reason could you give to prove  $\overline{KL} \cong \overline{PQ}$ ?

- (A) Vertical Angles Theorem
- (B) Reflexive Prop. of Congruence
- (C) Corresp. parts of  $\cong \triangle$  are  $\cong$ .
- (D) ASA
- (E) Definition of midpoint

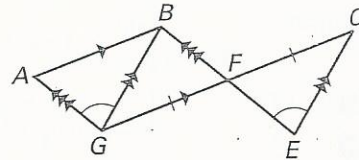
4. **Multiple Choice** You want to prove  $\overline{BC} \cong \overline{AF}$ . As a first step, which pair of triangles would you prove congruent?

- (A)  $\triangle ADF \cong \triangle CDB$
- (B)  $\triangle ADF \cong \triangle EDF$
- (C)  $\triangle BCD \cong \triangle FED$
- (D) B or C
- (E) Any of the above



- Multiple Choice** In Exercises 5–13, use the choices below to complete the proof that  $\overline{AG} \cong \overline{FE}$ .

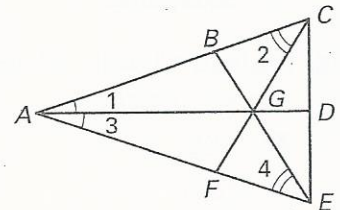
- (A) Alternate Interior Angles Theorem
- (B) ASA Congruence Postulate
- (C) Corresp. parts of  $\cong \triangle$  are  $\cong$ .
- (D) Vertical Angles Theorem
- (E) Definition of Congruence



Statements	Reasons
a. $\overline{AB} \parallel \overline{GC}, \overline{GB} \parallel \overline{EC},$ $\overline{AG} \parallel \overline{BE}, \overline{GF} \cong \overline{FC},$ $\angle AGB \cong \angle FEC$	a. Given
b. $\angle BFG \cong \angle EFC$	b. 5. _____
c. $\angle BGF \cong \angle ECF$	c. 6. _____
d. $\triangle BGF \cong \triangle ECF$	d. 7. _____
e. $\overline{BG} \cong \overline{EC}$	e. 8. _____
f. $\angle ABG \cong \angle FGB$	f. 9. _____
g. $m\angle ABG = m\angle FGB,$ $m\angle BGF = m\angle ECF$	g. 10. _____
h. $m\angle ABG = m\angle ECF$	h. Sub. prop. of equality
i. $\angle ABG \cong \angle ECF$	i. 11. _____
j. $\triangle ABG \cong \triangle FCE$	j. 12. _____
k. $\overline{AG} \cong \overline{FE}$	k. 13. _____

14. **Multi-Step Problem** In the diagram,  $\angle 1 \cong \angle 3$  and  $\angle 2 \cong \angle 4$ .

- a. Prove that  $\triangle AGC \cong \triangle AGE$ .
- b. Prove that  $\triangle BCG \cong \triangle FEG$ .
- c. Prove that  $\triangle CDG \cong \triangle EDG$ .



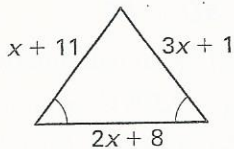
# Standardized Test Practice

For use with pages 236–242

**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** What is the value of  $x$ ?

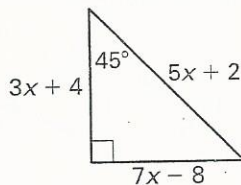
- (A) 3
- (B) 5
- (C) 7
- (D) 9
- (E) 11



2. **Multiple Choice**

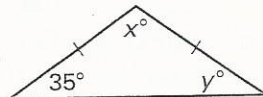
What is the length of a leg?

- (A) 3
- (B) 17
- (C) 12
- (D) 13
- (E) 19



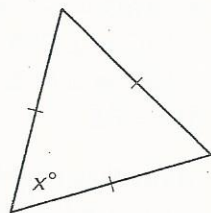
3. **Multiple Choice** What are the values of  $x$  and  $y$ ?

- (A)  $x = 72.5, y = 72.5$
- (B)  $x = 35, y = 35$
- (C)  $x = 35, y = 110$
- (D)  $x = 55, y = 55$
- (E)  $x = 110, y = 35$



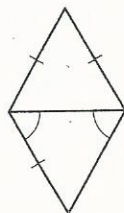
4. **Multiple Choice** What is the value of  $x$ ?

- (A) 30
- (B) 60
- (C) 90
- (D) 100
- (E) Cannot be determined



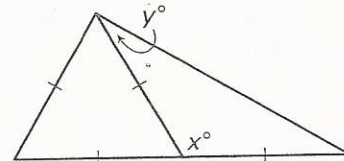
5. **Multiple Choice** Choose the reason the triangles are congruent.

- (A) SSS
- (B) SAS
- (C) AAS
- (D) ASA
- (E) Cannot be proven congruent



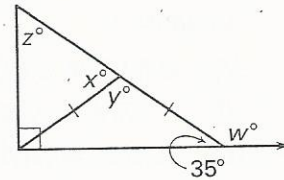
6. **Multiple Choice** Solve for  $x$  and  $y$ .

- (A)  $x = 120, y = 60$
- (B)  $x = 60, y = 60$
- (C)  $x = 30, y = 120$
- (D)  $x = 120, y = 30$
- (E)  $x = 60, y = 120$



7. **Multiple Choice** Solve for  $x$  and  $y$ .

- (A)  $x = 70, y = 55$
- (B)  $x = 55, y = 110$
- (C)  $x = 70, y = 110$
- (D)  $x = 70, y = 145$
- (E)  $x = 55, y = 145$



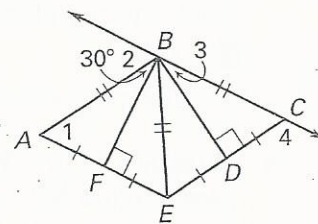
8. **Multiple Choice** Use the diagram in Exercise 7 to solve for  $w$  and  $z$ .

- (A)  $w = 145, z = 70$
- (B)  $w = 110, z = 55$
- (C)  $w = 110, z = 70$
- (D)  $w = 145, z = 55$
- (E)  $w = 70, z = 55$

9. **Quantitative Comparison**

Use the diagram to find the missing values. Choose the 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
$m\angle 1$	$m\angle 3$



# Standardized Test Practice

For use with pages 243–250

**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** An isosceles right triangle has a vertex at  $(0, 0)$  and another at  $(0, 8)$ . If its legs are 8 units, what point below *might* be the third vertex?

- (A)  $(8, 0)$
- (B)  $(-8, 0)$
- (C)  $(0, -8)$
- (D) A or B
- (E) All of the above

2. **Multiple Choice** A rectangle with sides of 3 units and 6 units is placed on a coordinate plane. If one vertex is at  $(0, 0)$ , which set of points could be the other vertex points?

- (A)  $(0, 6), (6, 3), (3, 6)$
- (B)  $(3, 0), (0, 6), (3, 6)$
- (C)  $(-3, 0), (-3, 6), (0, -6)$
- (D)  $(3, 0), (0, -6), (-3, -6)$
- (E) All of the above

3. **Multiple Choice** A right triangle has legs of 8 units and 10 units. Use a coordinate plane to solve for the hypotenuse.

- (A)  $\sqrt{18}$
- (B)  $4\sqrt{5}$
- (C)  $2\sqrt{41}$
- (D) 80
- (E)  $3\sqrt{2}$

4. **Multiple Choice** A rectangle with length  $h$  and width  $k$  is placed in a coordinate plane with one vertex at  $(0, 0)$ . What is a possible point for the vertex diagonal to  $(0, 0)$ ?

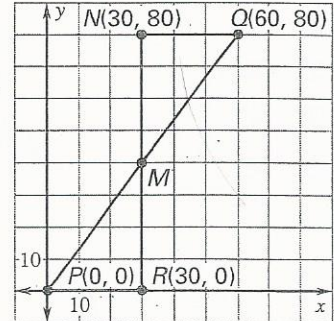
- (A)  $(0, h)$
- (B)  $(h, 0)$
- (C)  $(0, -k)$
- (D)  $(h, -k)$
- (E)  $(-h, 0)$

5. **Multiple Choice** Use the diagram in Exercise 6 to find the length of  $\overline{MP}$ .  $M$  is the midpoint of  $\overline{PQ}$ .

- (A) 25
- (B) 50
- (C) 40
- (D) 30
- (E) 125

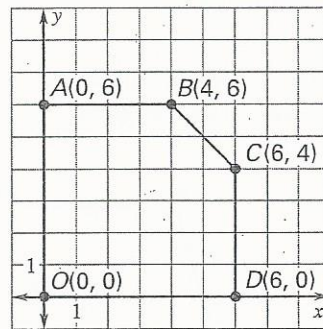
6. **Multiple Choice** What are the coordinates of the midpoint  $M$ ?

- (A)  $(40, 30)$
- (B)  $(60, 40)$
- (C)  $(30, 80)$
- (D)  $(60, 30)$
- (E)  $(30, 40)$



**Quantitative Comparison** In Exercises 7 and 8, use the diagram below. 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.



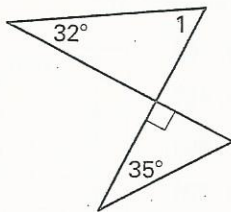
	Column A	Column B
7.	$AD$	$BC + CD$
8.	$OB$	$OC$

# Cumulative Standardized Test Practice

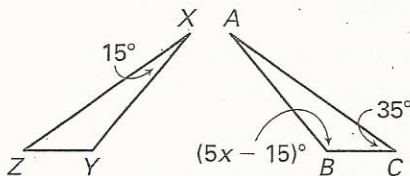
For use after Chapters 1-6

17. **Multiple Choice** Find the measure of  $\angle 1$ .

- (A)  $32^\circ$
- (B)  $35^\circ$
- (C)  $90^\circ$
- (D)  $58^\circ$
- (E)  $55^\circ$



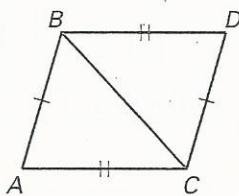
18. **Multiple Choice** Given  $\angle X \cong \angle A$  and  $\angle Z \cong \angle C$ , find the value of  $x$ .



- (A) 25
- (B) 27
- (C) 29
- (D) 30
- (E) 35

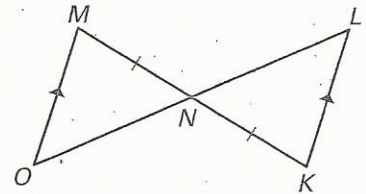
19. **Multiple Choice** Which postulate or theorem can be used to prove that  $\triangle ABC \cong \triangle DCB$ ?

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



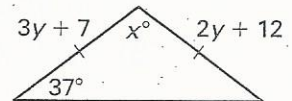
20. **Multiple Choice** Which postulate or theorem can be used to prove that  $\triangle MNO \cong \triangle KNL$  if  $\overleftrightarrow{MO} \parallel \overleftrightarrow{LK}$ ?

- (A) SSS
- (B) SAS
- (C) HL
- (D) AAS
- (E) none of these



21. **Multiple Choice** What are the values of  $x$  and  $y$ ?

- (A)  $x = 37, y = 5$
- (B)  $x = 106, y = 5$
- (C)  $x = 54, y = 4$
- (D)  $x = 106, y = 19$
- (E)  $x = 37, y = 19$



22. **Multiple Choice** A right triangle has legs of 24 units and 18 units. The length of the hypotenuse is     ?

- (A) 15 units
- (B) 30 units
- (C) 45 units
- (D) 15.9 units
- (E) 32 units