

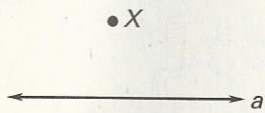
Standardized Test Practice

For use with pages 129-134

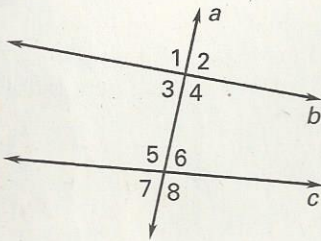
TEST TAKING STRATEGY Work as quickly as you can through the easier sections, but avoid making careless errors on easy questions.

1. **Multiple Choice** In the diagram, how many lines can be drawn through point X that are skew to line a?

- (A) 0 (B) 1
- (C) 2 (D) 3
- (E) More than 3



Multiple Choice In Exercises 2-5, use the diagram below.



2. Which angles are corresponding angles?

- (A) $\angle 1$ and $\angle 5$ (B) $\angle 4$ and $\angle 6$
- (C) $\angle 2$ and $\angle 6$ (D) A and B
- (E) A and C

3. Which angles are alternate exterior angles?

- (A) $\angle 2$ and $\angle 8$ (B) $\angle 2$ and $\angle 7$
- (C) $\angle 3$ and $\angle 8$ (D) A and B
- (E) A and C

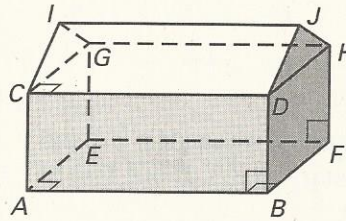
4. Which angles are consecutive interior angles?

- (A) $\angle 3$ and $\angle 5$ (B) $\angle 4$ and $\angle 6$
- (C) $\angle 3$ and $\angle 7$ (D) A and B
- (E) A and C

5. What type of angles are $\angle 4$ and $\angle 5$?

- (A) Corresponding angles
- (B) Alternate exterior angles
- (C) Alternate interior angles
- (D) Consecutive interior angles
- (E) Consecutive exterior angles

Multiple Choice In Exercises 6-8, use the diagram below. Think of each segment as part of a line.



6. \overleftrightarrow{AC} and \overleftrightarrow{HF} are _____?

- (A) perpendicular (B) skew
- (C) parallel (D) intersecting
- (E) None of these

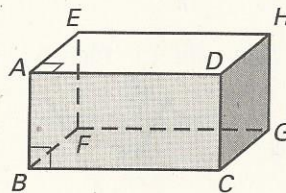
7. Which lines are skew to \overleftrightarrow{BF} ?

- (A) \overleftrightarrow{DH} and \overleftrightarrow{JH} (B) \overleftrightarrow{CA} and \overleftrightarrow{IG}
- (C) \overleftrightarrow{CD} and \overleftrightarrow{GH} (D) A and B
- (E) B and C

8. Which lines are perpendicular to \overleftrightarrow{CG} ?

- (A) \overleftrightarrow{CD} and \overleftrightarrow{CA} (B) \overleftrightarrow{GH} and \overleftrightarrow{EF}
- (C) \overleftrightarrow{HF} and \overleftrightarrow{CA} (D) A and B
- (E) B and C

9. **Multi-Step Problem** Use the diagram below to answer parts (a)-(d). Think of each segment as part of a line.



a. Name all lines parallel to \overleftrightarrow{AD} .

b. Name all lines skew to \overleftrightarrow{FG} .

c. Name all lines perpendicular to \overleftrightarrow{BF} .

d. **Critical Thinking** If you did not know $\angle ABC$ was a right angle, which answers above would be affected?

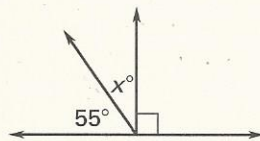
Standardized Test Practice

For use with pages 136–141

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.

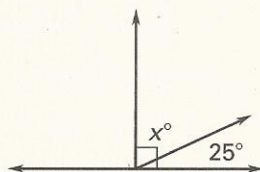
1. **Multiple Choice** Find the value of x .

- (A) 55 (B) 35
- (C) 90 (D) 145
- (E) 125



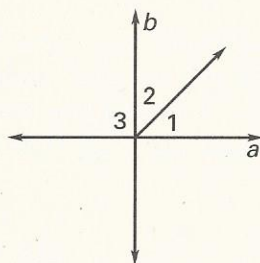
2. **Multiple Choice** Find the value of x .

- (A) 25 (B) 50
- (C) 90 (D) 65
- (E) 155



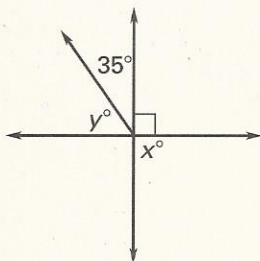
3. **Multiple Choice**
Which of the following must be true if $a \perp b$?

- I. $\angle 1$ and $\angle 2$ are complementary.
 - II. $m\angle 1 + m\angle 2 < 180^\circ$
 - III. $m\angle 1 = m\angle 2$
- (A) I only (B) II only
 - (C) I and II (D) I and III
 - (E) I, II, and III



4. **Multiple Choice** Find the value of x .

- (A) 35
- (B) 70
- (C) 55
- (D) 110
- (E) 90



5. **Multiple Choice** Find the value of y from Exercise 4.

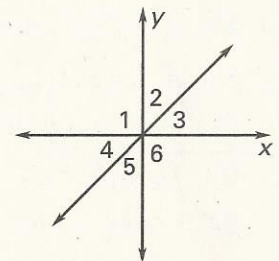
- (A) 35 (B) 70 (C) 55
- (D) 110 (E) 90

Quantitative Comparison For Exercises 6–8, use the diagram below. Choose the statement that is true about the given values.

Given: $x \perp y$

$$m\angle 5 = 35^\circ$$

- (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 from the given information.



	Column A	Column B
6.	$m\angle 2 + m\angle 4$	$m\angle 6$
7.	$m\angle 1 + m\angle 2$	$m\angle 3 + m\angle 6$
8.	$m\angle 3$	$m\angle 5$

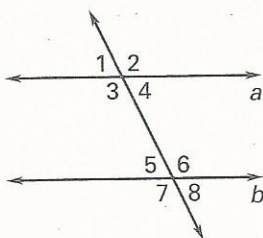
Standardized Test Practice

For use with pages 143–149

TEST TAKING STRATEGY

Sketch graphs or figures in your test booklet to help you solve the problem. Even though you must keep your answer sheet neat, you can make any kind of mark you want in your test booklet.

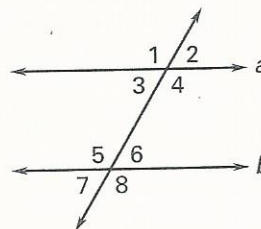
Multiple Choice For Exercises 1–4, use the diagram at the right, where $a \parallel b$.



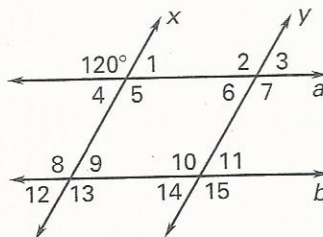
- Choose the reason the statement “If the $m\angle 1 = 65^\circ$, then $m\angle 5 = 65^\circ$ ” is true.
 - (A) Alternate Interior Angles Theorem
 - (B) Alternate Exterior Angles Theorem
 - (C) Consecutive Interior Angles Theorem
 - (D) Vertical Angles Theorem
 - (E) Corresponding Angles Postulate
- Choose the reason the statement “If the $m\angle 3 = 115^\circ$, then $m\angle 5 = 65^\circ$ ” is true.
 - (A) Alternate Interior Angles Theorem
 - (B) Alternate Exterior Angles Theorem
 - (C) Consecutive Interior Angles Theorem
 - (D) Vertical Angles Theorem
 - (E) Corresponding Angles Postulate
- Choose the reason the statement “If the $m\angle 2 = 115^\circ$, then $m\angle 7 = 115^\circ$ ” is true.
 - (A) Alternate Interior Angles Theorem
 - (B) Alternate Exterior Angles Theorem
 - (C) Consecutive Interior Angles Theorem
 - (D) Vertical Angles Theorem
 - (E) Corresponding Angles Postulate
- If the $m\angle 6 = 115^\circ$, then the $m\angle 3 =$?
 - (A) 65°
 - (B) 115°
 - (C) 180°
 - (D) 90°
 - (E) cannot be determined

5. **Multiple Choice** Which of the following is not true when $a \parallel b$?

- (A) $\angle 1 \cong \angle 5$ and $\angle 4 \cong \angle 8$
- (B) $m\angle 2 = m\angle 6$
- (C) $m\angle 1 + m\angle 5 = 180^\circ$
- (D) $m\angle 4 + m\angle 6 = 180^\circ$
- (E) $m\angle 4 = m\angle 8$



Quantitative Comparison In Exercises 6–8, use the diagram below where $a \parallel b$ and $x \parallel y$. Choose the statement 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
6.	$m\angle 2$	$m\angle 8$
7.	$m\angle 10 + m\angle 6$	$m\angle 3 + m\angle 12$
8.	$m\angle 4$	$m\angle 14$

Standardized Test Practice

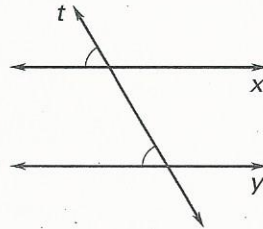
For use with pages 150–156

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

Which postulate or theorem would prove $x \parallel y$?

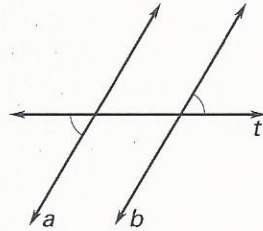
- (A) Consecutive Interior Angles Converse
- (B) Corresponding Angles Converse
- (C) Alternate Interior Angles Converse
- (D) Alternate Exterior Angles Converse
- (E) Cannot prove $x \parallel y$ with given information



2. Multiple Choice

Which postulate or theorem would prove $a \parallel b$?

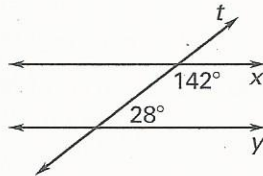
- (A) Consecutive Interior Angles Converse
- (B) Corresponding Angles Converse
- (C) Alternate Interior Angles Converse
- (D) Alternate Exterior Angles Converse
- (E) Cannot prove $a \parallel b$ with given information



3. Multiple Choice

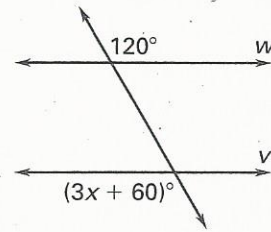
Which postulate or theorem would prove $x \parallel y$?

- (A) Consecutive Interior Angles Converse
- (B) Corresponding Angles Converse
- (C) Alternate Interior Angles Converse
- (D) Alternate Exterior Angles Converse
- (E) Cannot prove $x \parallel y$ with given information



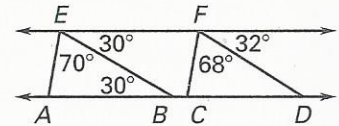
4. Multiple Choice What value of x would make lines w and v parallel?

- (A) 30
- (B) 20
- (C) 60
- (D) 40
- (E) 50

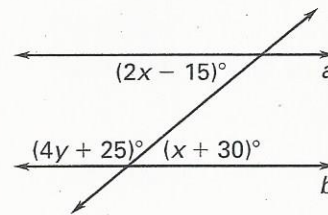


5. Multiple Choice Which lines are parallel?

- (A) $\overleftrightarrow{EB} \parallel \overleftrightarrow{FD}$
- (B) $\overleftrightarrow{AE} \parallel \overleftrightarrow{CF}$
- (C) $\overleftrightarrow{EF} \parallel \overleftrightarrow{BC}$
- (D) B and C
- (E) All of the above



6. Quantitative Comparison Use the diagram below to find the values of x and y that would make $a \parallel b$.



Choose the statement 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
x	y

Standardized Test Practice

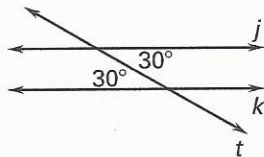
For use with pages 157-164

TEST TAKING STRATEGY It is important to remember that your SAT score will not solely determine your acceptance into a college or university. Do not put added pressure on yourself to do well. If you are not satisfied with your SAT score, remember that you can take it again.

1. **Multiple Choice** Complete the following to make a true statement. "In a plane, if two lines are ? to the same line, then they are ? to each other."

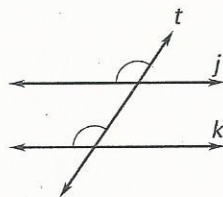
- (A) perpendicular, parallel
- (B) perpendicular, perpendicular
- (C) parallel, parallel
- (D) parallel, perpendicular
- (E) A and C

2. **Multiple Choice** Which theorem or postulate shows $j \parallel k$?



- (A) Alt. Int. \angle Converse
- (B) Cons. Int. \angle Converse
- (C) Alt. Ext. \angle Converse
- (D) Corresp. \angle Converse
- (E) None of these

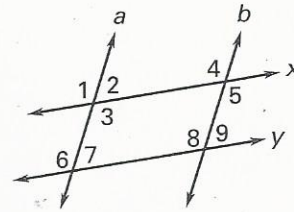
3. **Multiple Choice** Which theorem or postulate shows $j \parallel k$?



- (A) Alt. Int. \angle Converse
- (B) Cons. Int. \angle Converse
- (C) Alt. Ext. \angle Converse
- (D) Corresp. \angle Converse
- (E) None of these

4. **Multiple Choice** Which of the statements must be true if $a \parallel b$ and $x \parallel y$?

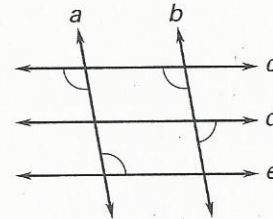
- I. $m\angle 1 = m\angle 5$
- II. $m\angle 3 + m\angle 5 = 180^\circ$
- III. $m\angle 7 + m\angle 8 = 180^\circ$



- (A) I only
- (B) II only
- (C) III only
- (D) I and III
- (E) All of the above

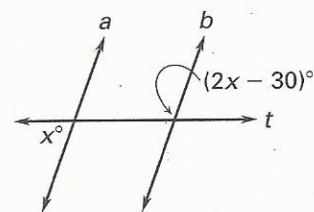
5. **Multiple Choice** Determine which lines must be parallel.

- (A) $a \parallel b$
- (B) $c \parallel d$
- (C) $c \parallel e$
- (D) A and B
- (E) A and C



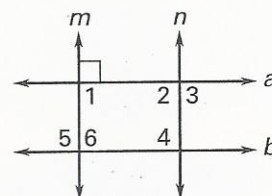
6. **Multiple Choice** What value of x makes $a \parallel b$?

- (A) 10
- (B) 30
- (C) 50
- (D) 70
- (E) 90



7. **Multi-Step Problem** Given $a \parallel b$, $m \parallel n$, and $a \perp m$.

- a. Prove $a \perp n$.
- b. Prove $b \perp n$.



Standardized Test Practice

For use with pages 165–171

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** Find the slope of the line that passes through (5, 2) and (8, -1).

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

2. **Multiple Choice** Which equation of the line has a slope of 5 and passes through point (-2, 1)?

- (A) $y = 5x - 11$ (B) $y = 5x - 2$
 (C) $y = 5x - 9$ (D) $y = 5x + 11$
 (E) $y = 11x + 5$

3. **Multiple Choice** Which equation of the line has a y-intercept of 6 and is parallel to $y = -\frac{1}{2}x + 2$?

- (A) $y = -\frac{1}{2}x - 6$ (B) $y = \frac{1}{2}x - 6$
 (C) $y = -\frac{1}{2}x + 6$ (D) $y = \frac{1}{2}x + 6$
 (E) $y = 2x + 6$

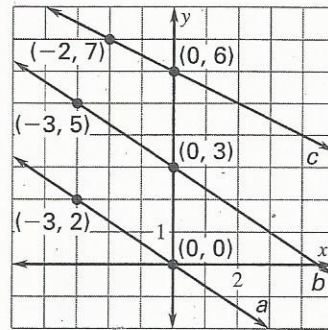
4. **Multiple Choice** Which equation of the line passes through (3, -2) and is parallel to $y = \frac{2}{3}x$?

- (A) $y = \frac{2}{3}x - 2$ (B) $y = \frac{2}{3}x + 3$
 (C) $y = \frac{2}{3}x - 4$ (D) $y = \frac{2}{3}x$
 (E) $y = \frac{2}{3}x + 4$

5. **Multiple Choice** Which of the following is an equation of a line parallel to $4y - 8 = 3x$?

- (A) $y = -\frac{3}{4}x + 6$ (B) $y = \frac{4}{3}x + 2$
 (C) $y = -\frac{4}{3}x - 1$ (D) $y = 3x - 4$
 (E) $y = \frac{3}{4}x$

6. **Multiple Choice** Which lines are parallel?



- (A) $a \parallel b$ (B) $b \parallel c$ (C) $a \parallel c$
 (D) None (E) All 3

7. **Multiple Choice** A line k has equation $y = -\frac{2}{3}x + 1$. If $k \parallel i$ and i passes through point (4, 1), what is the equation of i ?

- (A) $y = -\frac{2}{3}x + \frac{11}{3}$ (B) $y = -\frac{3}{2}x + 4$
 (C) $y = -\frac{2}{3}x + 4$ (D) $y = \frac{2}{3}x + \frac{11}{3}$
 (E) $y = -\frac{2}{3}x + 1$

Quantitative Comparison In Exercises 8 and 9, choose the statement below which 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
8.	The slope of the line passing through (7, 5) and (4, 6)	The slope of the line passing through (7, 3) and (11, 2)
9.	The y-intercept of $y = \frac{3}{4}x$	The y-intercept of the line passing through (-1, 2) and (4, -1)

Standardized Test Practice

For use with pages 172–178

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 is the slope of a line perpendicular to the line $y = -2x + 6$?

- (A) 2 (B) $\frac{1}{2}$ (C) $-\frac{1}{2}$
 (D) -6 (E) $-\frac{1}{6}$

2. **Multiple Choice** Which equation of a line is perpendicular to $y = -\frac{2}{3}x - \frac{1}{3}$?

- (A) $y = -\frac{2}{3}x + 3$ (B) $y = -\frac{5}{2}x + 2$
 (C) $y = -\frac{5}{2}x + 3$ (D) $y = 3x + 3$
 (E) $y = \frac{5}{2}x + 6$

3. **Multiple Choice** The product of the slopes of two nonvertical perpendicular lines is _____?

- (A) 0 (B) 1 (C) -1
 (D) 2 (E) Cannot be determined with given information

4. **Multiple Choice** A line k has equation $y = -\frac{8}{11}x + 3$. If $k \perp l$ and l passes through point $(4, 3)$, what is the equation of line l ?

- (A) $y = \frac{11}{8}x - \frac{5}{2}$ (B) $y = \frac{8}{11}x + \frac{1}{11}$
 (C) $y = \frac{8}{11}x + \frac{5}{2}$ (D) $y = -\frac{11}{8}x + \frac{17}{2}$
 (E) $y = \frac{11}{8}x + \frac{17}{2}$

5. **Multiple Choice** A line i has equation $y = \frac{1}{2}x$. If $i \perp j$ and j passes through point $(6, 2)$, what is the equation of j ?

- (A) $y = -2x + 14$ (B) $y = -2x - 14$
 (C) $y = -2x - 10$ (D) $y = -2x + 10$
 (E) $y = -\frac{1}{2}x + 10$

6. **Multiple Choice** Which lines are perpendicular?

- (A) $y = \frac{1}{2}x + 6$ (B) $y = 3x + \frac{1}{3}$
 $y = -\frac{1}{2}x + 1$ $y = 5x - 3$
 (C) $y = \frac{2}{3}x + 3$ (D) $y = 2x + 3$
 $y = -\frac{3}{2}x - 1$ $y = \frac{1}{2}x - 2$
 (E) None of these

7. **Multiple Choice** Which of the following statements are true about lines w , n , p , and z ?

$$w: y = \frac{3}{2}x + 2$$

$$n: y = \frac{2}{3}x + 6$$

$$p: y = -\frac{3}{2}x - 3$$

$$z: y = \frac{2}{3}x + 1$$

I. $w \perp p$ II. $n \parallel z$ III. $z \perp p$

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

8. **Multi-Step Problem**

- On a coordinate plane, plot points $A(2, 1)$ and $B(5, 2)$.
- Find the equation of the line j passing through points A and B .
- Find the equation of the line k , perpendicular to line j and passing through point A .
- Find the equation of the line l , parallel to line k and passing through point B .
- Critical Thinking** If the bottom of a rectangle lies along line j , and its sides lie on lines k and l , find the slope of the line representing the top.

10. **Multiple Choice** Solve $x + 12 = 24$, then choose the property that applies to the required step.

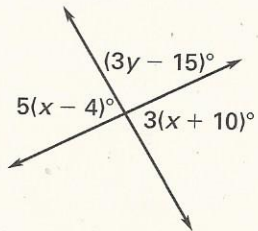
- (A) Substitution property of equality.
- (B) Division property of equality.
- (C) Subtraction property of equality.
- (D) Distributive property of equality.
- (E) Reflexive property of equality.

11. **Multiple Choice** Two angles are supplementary. If $m\angle 1$ is 67° , what is $m\angle 2$?

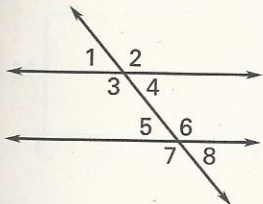
- (A) 67°
- (B) 23°
- (C) 46°
- (D) 134°
- (E) 113°

12. **Multiple Choice** Solve for x and y .

- (A) $x = 21.25, y = 24$
- (B) $x = 25, y = 41\frac{2}{3}$
- (C) $x = 22, y = 31.67$
- (D) $x = 25, y = 30$
- (E) $x = 24, y = 28.3$



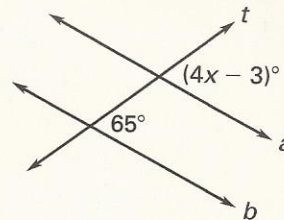
13. **Multiple Choice** In the diagram, $\angle 4$ and $\angle 5$ are what type of angles?



- (A) corresponding angles
- (B) alternate interior angles
- (C) alternate exterior angles
- (D) consecutive interior angles
- (E) consecutive exterior angles

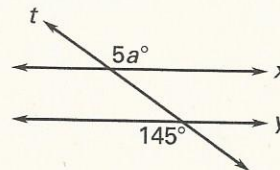
14. **Multiple Choice** Find the value of x when $a \parallel b$.

- (A) 15
- (B) 16
- (C) 17
- (D) 18
- (E) 19



15. **Multiple Choice** What value of a would make lines x and y parallel?

- (A) 29
- (B) 36
- (C) 7
- (D) 14
- (E) 58



16. **Quantitative Comparison** Choose the statement below that is true.

- (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
Slope of the line $5x + 2y = 12$	Slope of the line perpendicular to $y = \frac{2}{3}x + 6$

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

- (A) 32°
- (B) 35°
- (C) 90°
- (D) 58°
- (E) 55°

