Name _____ Date _____

CHAPTER 6 Standardized Test

For use after Chapter 6

Multiple Choice

1. A rectangle is $\frac{5}{8}$ as wide as it is long. How wide is the rectangle if it is 10 inches long?

(A) 8 in. (B) 16 in.

(C) $5\frac{3}{4}$ in. (D) $6\frac{1}{4}$ in.

2. Find the geometric mean of 8 and 32.

(A) 20 (B) 16 (C) 24 (D) 12

3. One serving of a cookie recipe calls for 6 tablespoons of sugar. If one serving makes enough for 4 people, how much sugar is needed to serve 10 people?

(A) 15 Tbs (B) 60 Tbs

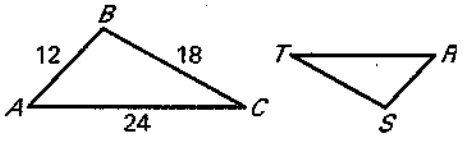
(C) 12 Tbs (D) 24 Tbs

4. If the corresponding angles of two polygons are congruent and the corresponding side lengths are proportional, then the two polygons are ___?___.

(A) regular (B) concave

(C) similar (D) equilateral

5. Given $\triangle ABC \sim \triangle RST$, find the perimeter of $\triangle RST$ if the scale factor of $\triangle ABC$ to $\triangle RST$ is $\frac{3}{2}$.



(A) 36 (B) 81 (C) 54 (D) 27

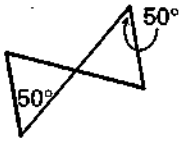
6. If two angles of one triangle are congruent to two angles of another triangle, then the triangles are ___?___.

(A) equilateral (B) congruent

(C) equiangular (D) similar

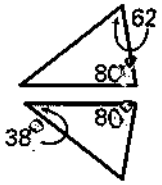
7. Use the Angle-Angle Similarity Postulate to determine which pair of triangles is *not* similar.

(A)

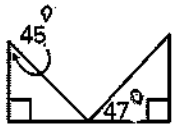


(B)

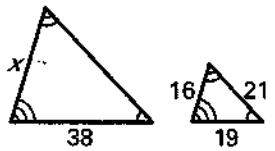
(C)



(D)

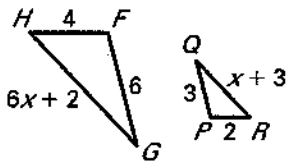


8. Find x.



(A) 2 (B) 32 (C) 42 (D) 38

9. If $\triangle PQR \sim \triangle FGH$, find QR.



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

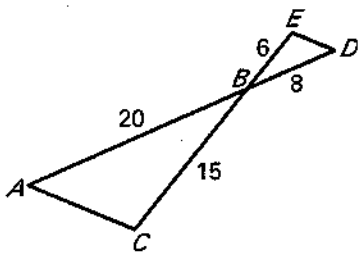
10. Which Similarity Theorem can be used to show $\triangle ABC \sim \triangle DBE$?

(A) SSS

(B) AA

(C) SAS

(D) AAS



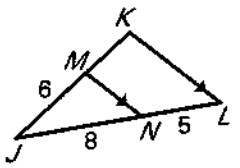
11. If a line parallel to one side of a triangle intersects the other two sides, then it divides the two sides ___?___.

(A) equally (B) proportionally

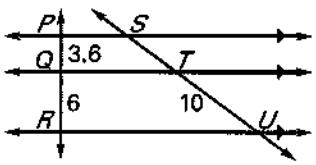
(C) congruently (D) perpendicularly

12. Use the Triangle Proportionality Theorem to find *MK*.

Ⓐ 3
Ⓑ 3.75
Ⓒ 3.5
Ⓓ 3.25

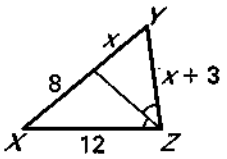


13. Find *SU*.



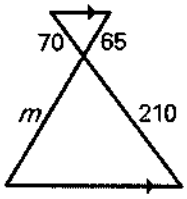
Ⓐ 12 Ⓑ 4 Ⓒ 6 Ⓓ 16

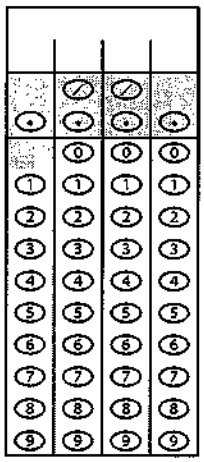
14. Find *YZ*.



Gridded Answer

16. Find *m*.





Name _____ Date _____

CHAPTER 6

SAT/ACT Chapter Test

For use after Chapter 6

Multiple Choice

1. What is the geometric mean of 5 and 20?

(A) 5 (B) 10 (C) 15
(D) 20 (E) 100

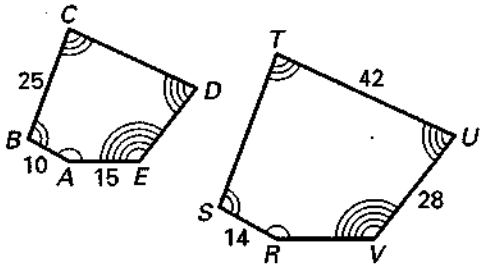
2. In $\triangle XYZ$, the measures of the angles are in the extended ratio of 2 : 3 : 5. What are the measures of the angles?

(A) 18°, 36°, 54° (B) 20°, 21°, 23°
(C) 36°, 54°, 90° (D) 36°, 39°, 41°
(E) 54°, 54°, 90°

3. An architect has a scale drawing of an addition that is to be added to a house with a scale of 1 inch : 2 feet. If the drawing is 6 inches by 10 inches, how big is the addition to the house going to be?

(A) 6 feet by 10 feet
(B) 8 feet by 12 feet
(C) 10 feet by 12 feet
(D) 12 feet by 20 feet
(E) none of the above

In Exercises 4 and 5, use the following diagram.



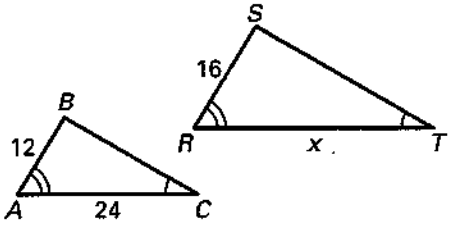
4. What is the length of $\overline{RV}$?

(A) 21 (B) 25
(C) 28 (D) 29
(E) 36

5. What is the perimeter of *RSTUV*?

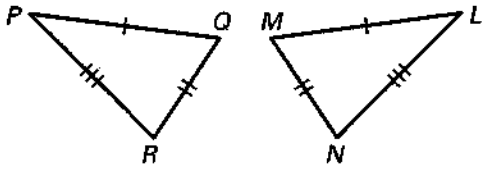
(A) 100 (B) 110
(C) 120 (D) 135
(E) 140

6. What is the value of x?



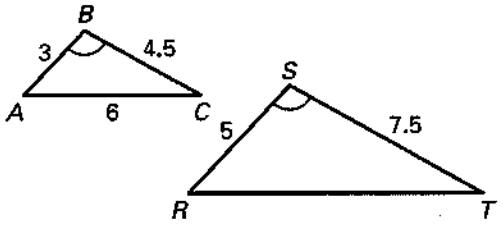
(A) 15 (B) 18
(C) 24 (D) 32
(E) none of the above

7. How are the triangles similar?



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

8. What is the perimeter of $\triangle RST$?

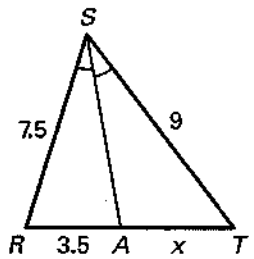


(A) 13.5 (B) 14
(C) 22.5 (D) 36
(E) 38.5

SAT/ACT Chapter Test *continued*

For use after Chapter 6

9. What is the length of $\overline{RT}$?



(A) 4.2
(B) 7.7
(C) 8
(D) 22.5
(E) 24

CHAPTER 7

Standardized Test

For use after Chapter 7

Multiple Choice

1. Which equation is *not* correct?

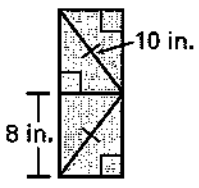
(A) $t^2 - r^2 = s^2$ (B) $t^2 + r^2 = s^2$

(C) $s^2 - t^2 = -r^2$ (D) $t^2 - s^2 = r^2$

2. A 25-foot ladder leans against a wall 7 feet from the base of the wall. How high up the wall does the ladder touch?

(A) 24 ft (B) 18 ft (C) 20 ft (D) 21.5 ft

3. Find the area of the rectangle.



(A) 192 in.^{2} (B) 48 in.^{2}

(C) 24 in.^{2} (D) 96 in.^{2}

4. If the square of the length of the longest side of a triangle is greater than the sum of the squares of the lengths of the other two sides, then the triangle is ___?___.

(A) equilateral (B) a right triangle

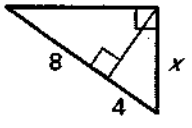
(C) acute (D) none of these

5. Classify $\triangle ABC$ if the vertices are $A(-12, 5)$, $B(12, 5)$, and $C(10, 17)$.

(A) right scalene (B) obtuse scalene

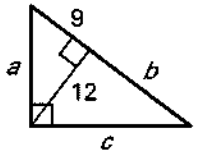
(C) acute scalene (D) none of these

6. Find x.



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

7. Find a, b, and c.



(A) $a = 20, b = 25, c = 15$

(B) $a = 15, b = 25, c = 20$

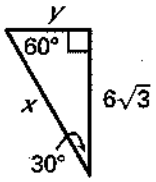
(C) $a = 15, b = 16, c = 20$

(D) $a = 16, b = 20, c = 25$

8. In a 45°-45°-90° triangle, the hypotenuse is ___?___ times as long as each leg.

(A) $\sqrt{3}$ (B) $\sqrt{2}$ (C) $\frac{\sqrt{2}}{2}$ (D) $\frac{3}{2}$

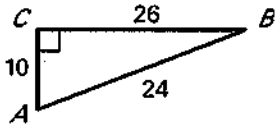
9. Find x and y.



(A) $x = 6, y = 12$ (B) $x = 12\sqrt{3}, y = 6$

(C) $x = 8\sqrt{3}, y = 8$ (D) $x = 12, y = 6$

10. Find $\tan A$ and $\tan B$.



(A) $\tan A \approx 0.38$, $\tan B = 2.6$

(B) $\tan A = 2.6$, $\tan B \approx 0.38$

(C) $\tan A \approx 1.08$, $\tan B \approx 0.42$

(D) $\tan A \approx 0.92$, $\tan B = 2.4$

11. Find the approximate area of the triangle.

(A) 15.1 m^2 (B) 5.03 m^2

(C) 45.3 m^2 (D) 30.2 m^2

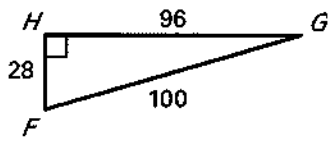
Name _____

CHAPTER 7

Standardized Test

For use after Chapter 7

12. Find sin F and sin G.



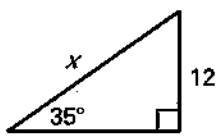
(A) sin $F = 0.28$, sin $G = 0.96$

(B) sin $F \approx 3.57$, sin $G \approx 1.04$

(C) sin $F \approx 1.04$, sin $G \approx 3.57$

(D) sin $F = 0.96$, sin $G = 0.28$

13. Which expression could be used to find the value of x in the diagram?



(A) $\cos 55° = \frac{12}{x}$ (B) $\cos 35° = \frac{x}{12}$

(C) $\cos 35° = \frac{12}{x}$ (D) $\cos 55° = \frac{x}{12}$

14. Which is *not* enough given information needed to solve a right triangle?

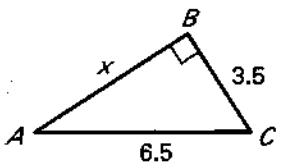
(A) two acute angles and one side length

(B) measure of the hypotenuse

(C) two side lengths

(D) one side length and the measure of one acute angle

15. Find $m\angle A$.



(A) 28.3° (B) 32.58°

(C) 57.42° (D) 45°

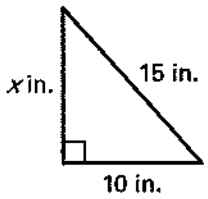
CHAPTER 7

SAT/ACT Chapter Test

For use after Chapter 7

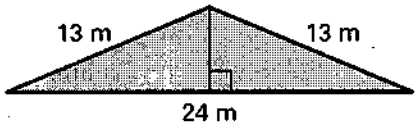
Multiple Choice

1. What is the value of x? Round your answer to the nearest tenth.



Ⓐ 11.0 Ⓑ 11.1 Ⓒ 11.2
Ⓓ 18.0 Ⓔ 18.1

2. What is the area of the triangle to the nearest square meter?



Ⓐ 30 m^2 Ⓑ 60 m^2 Ⓒ 120 m^2
Ⓓ 156 m^2 Ⓔ 242 m^2

3. Which of the following is *not* a Pythagorean Triple?

Ⓐ 3, 4, 5 Ⓑ 5, 12, 13
Ⓒ 15, 20, 25 Ⓓ 21, 72, 75
Ⓔ 25, 45, 51

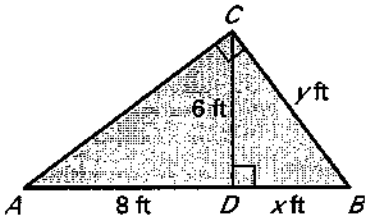
4. Which side lengths form an obtuse triangle?

Ⓐ 2, 5, 8 Ⓑ 4, 5, 6
Ⓒ 17, 18, 19 Ⓓ 28, 96, 100
Ⓔ 40, 75, 85

5. What type of triangle has side lengths of 10, 28, and 29?

Ⓐ acute Ⓑ obtuse
Ⓒ scalene Ⓓ right
Ⓔ none of the above

In Exercises 6–8, use the following figure.



6. What is the value of x?

Ⓐ 4.5 Ⓑ 7.5 Ⓒ 10
Ⓓ 10.5 Ⓔ 12.5

7. What is the value of y?

Ⓐ 4.5 Ⓑ 7.5 Ⓒ 10
Ⓓ 10.5 Ⓔ 12.5

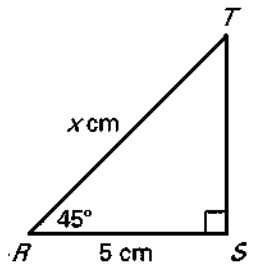
8. What is the area of $\triangle ABC$?

Ⓐ 13.5 ft^2 Ⓑ 22.5 ft^2 Ⓒ 24 ft^2
Ⓓ 37.5 ft^2 Ⓔ 42 ft^2

9. What is the geometric mean of 2 and 32?

Ⓐ 2 Ⓑ 6 Ⓒ 8
Ⓓ 16 Ⓔ 64

10. What is the value of x? Round your answer to the nearest tenth.



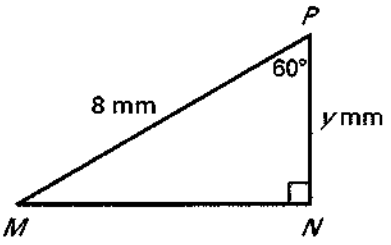
Ⓐ 3.5 Ⓑ 5.0 Ⓒ 6.4
Ⓓ 7.0 Ⓔ 7.1

Name _____ Date _____

CHAPTER 7 **SAT/ACT Chapter Test** *continued*

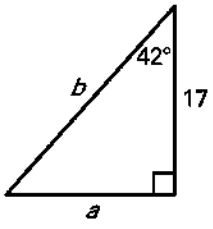
For use after Chapter 7

11. What is the value of y? Round your answer to the nearest tenth.



(A) 4.0 (B) 4.6 (C) 6.3
(D) 6.9 (E) 13.9

In Exercises 12 and 13, use the following figure.



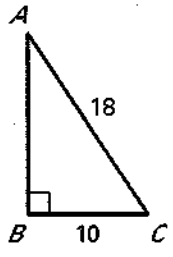
12. What is the value of a to the nearest tenth?

(A) 11.4 (B) 12.6 (C) 15.3
(D) 18.8 (E) 25.4

13. What is the value of b to the nearest tenth?

(A) 12.6 (B) 15.3 (C) 16.4
(D) 22.9 (E) 25.4

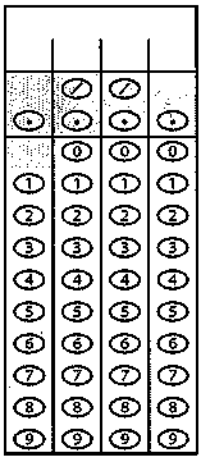
14. What is the measure of $\angle A$ to the nearest degree?



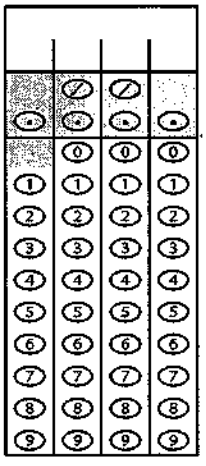
(A) 29° (B) 34° (C) 56°
(D) 61° (E) 65°

Gridded Answer

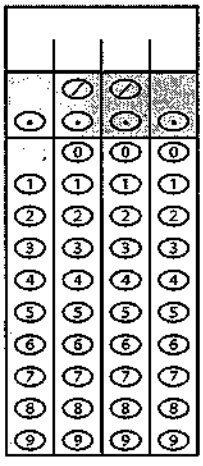
15. Let B be an acute angle in a right triangle. Approximate the measure of B to the nearest tenth of a degree when $\cos B = 0.2536$.



16. The angle of elevation from the tip of a flagpole's shadow to the top of the flagpole is 63°. The length of the shadow is about 12 feet. How tall is the flagpole to the nearest tenth of a foot?



17. Ski lift cables are strung to the top of a 1200-foot mountain. The angle of elevation of the cables is 30°. How long are the cables?



Name _____ Date _____

CHAPTER 8 Standardized Test

For use after Chapter 8

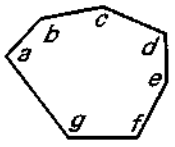
Multiple Choice

1. A segment of a polygon that joins two nonconsecutive vertices is called a __?__.

(A) transversal (B) diagonal

(C) hypotenuse (D) geometric mean

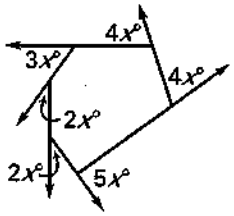
2. What is the sum of the measures of the interior angles of the figure shown?



(A) 900° (B) 1260°

(C) 720° (D) 1080°

3. Find x.



(A) 27

(B) 36

(C) 9

(D) 18

4. Which is *not* true of a parallelogram?

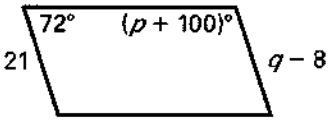
(A) Opposite angles are congruent.

(B) Consecutive angles are complementary.

(C) Opposite sides are congruent.

(D) Diagonals bisect each other.

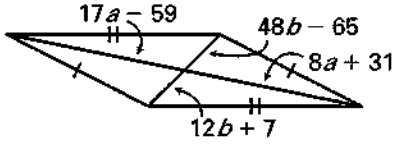
5. Find p and q.



(A) $p = 108, q = 29$ (B) $p = -28, q = 21$

(C) $p = 8, q = 29$ (D) $p = 108, q = 21$

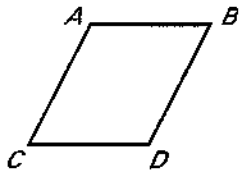
6. Find a and b.



(A) $a = 111, b = 31$ (B) $a = 2, b = 10$

(C) $a = 10, b = 2$ (D) $a = 31, b = 111$

7. Which statement would *not* prove that $ABCD$ is a parallelogram?



(A) $\overline{AC} \cong \overline{CD}$ and $\overline{AB} \cong \overline{BD}$

(B) $\overline{AD}$ and $\overline{BC}$ bisect each other.

(C) $\angle A \cong \angle D$ and $\angle B \cong \angle C$

(D) $\overline{AB} \parallel \overline{CD}$ and $\overline{AB} \cong \overline{CD}$

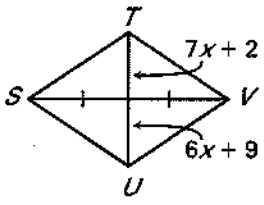
8. What value of x makes quadrilateral $STUV$ a parallelogram?

(A) 14

(B) 102

(C) 51

(D) 7



9. Which statement is false?

(A) A parallelogram is a rectangle if and only if its diagonals are congruent.

(B) A parallelogram is a rhombus if and only if its diagonals are congruent.

(C) A quadrilateral is a square if and only if it is a rhombus and a rectangle.

(D) A quadrilateral is a rectangle if and only if it has four right angles.

10. A quadrilateral with exactly one pair of parallel sides is a __?__.

(A) rhombus (B) parallelogram

(C) trapezoid (D) square

11. Which statement about isosceles trapezoids is false?

(A) The base segments are congruent.

(B) It has a pair of congruent base angles.

(C) Its diagonals are congruent.

(D) Each pair of base angles is congruent.

12. Which statement about kites is false?

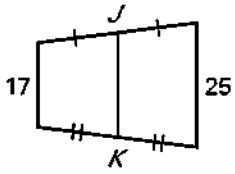
Ⓐ A kite's diagonals are perpendicular.

Ⓑ A kite's opposite sides are congruent.

Ⓒ A kite has two pairs of consecutive congruent sides.

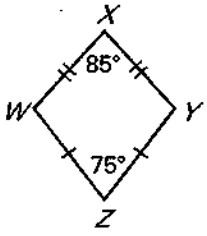
Ⓓ A kite has exactly one pair of opposite angles that are congruent.

13. Find the length of the midsegment of the trapezoid shown.



Ⓐ 21 Ⓑ 19 Ⓒ 20 Ⓓ 22

14. *WXYZ* is a kite. Find $m\angle W$.



Ⓐ 160°

Ⓑ 200°

Ⓒ 95°

Ⓓ 100°

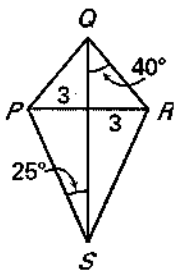
15. Points $A(3, 2)$, $B(7, 2)$, $C(6, 9)$ and $D(4, 9)$ are the vertices of a quadrilateral. What is the most specific name for *ABCD*?

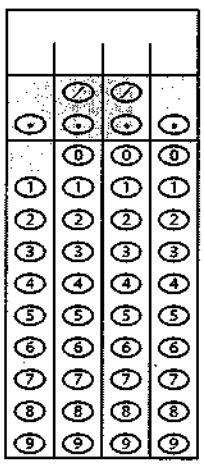
Ⓐ parallelogram Ⓑ trapezoid

Ⓒ rectangle Ⓓ isosceles trapezoid

Gridded Answer

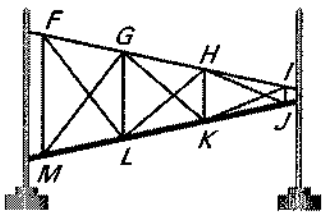
16. Find the perimeter of kite *PQRS* to the nearest tenth.





Short Response

17. In the section of the suspension bridge shown, $\overline{GL}$ is the midsegment of trapezoid *FHKM* and $\overline{HK}$ is the midsegment of trapezoid *GJJL*.



a. If $HK = 30$ ft and $GL = 50$ ft, how much cable is needed for $\overline{FM}$ and $\overline{IJ}$?

b. If all trapezoids shown are isosceles trapezoids and $FG = 60$ ft, $GH = 40$ ft, and $HI = 20$ ft, find the length of all 16 segments to determine the total amount of linear cable feet needed.

Name _____ Date _____

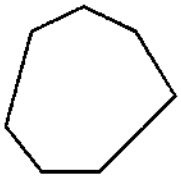
CHAPTER 8

SAT/ACT Chapter Test

For use after Chapter 8

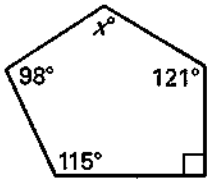
Multiple Choice

1. What is the sum of the interior angles of the following convex polygon?



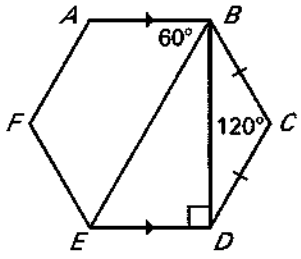
(A) 630° (B) 900° (C) 1080°
(D) 1260° (E) 1620°

2. What is the value of x?



(A) 105 (B) 110 (C) 115
(D) 116 (E) 121

In Exercises 3–5, use the following figure.



3. What is the measure of $\angle BED$?

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

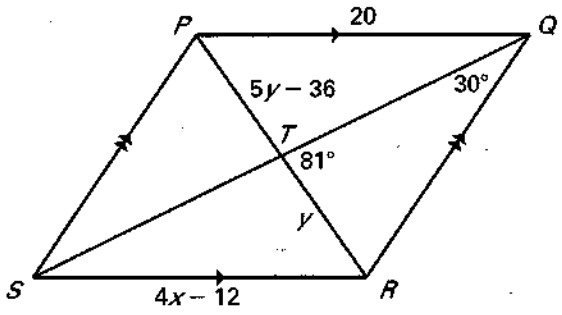
4. What is the measure of $\angle EBD$?

(A) 30° (B) 45° (C) 60°
(D) 90° (E) 110°

5. What is the measure of $\angle CBD$?

(A) 30° (B) 45° (C) 60°
(D) 90° (E) 110°

In Exercises 6–9, use the following figure.



6. What is the measure of $\angle SPT$?

(A) 26° (B) 56°
(C) 69° (D) 81°
(E) 124°

7. What is the measure of $\angle PQT$?

(A) 16° (B) 26°
(C) 56° (D) 69°
(E) 124°

8. What is the value of x?

(A) 2 (B) 4
(C) 8 (D) 10
(E) 20

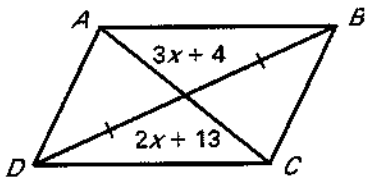
9. What is the length of $\overline{PR}$?

(A) 3 (B) 6
(C) 9 (D) 18
(E) 24

SAT/ACT Chapter Test *continued*

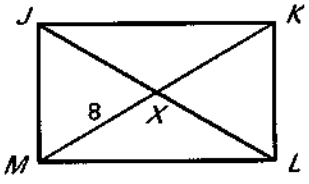
For use after Chapter 8

10. What value of x makes the quadrilateral $ABCD$ a parallelogram?



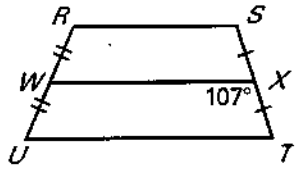
Ⓐ 1.8 Ⓑ 3.4 Ⓒ 5
Ⓓ 9 Ⓔ 17

11. If $JKLM$ is a rectangle, find the length of $\overline{JL}$.



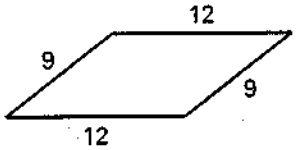
Ⓐ 8 Ⓑ 16 Ⓒ 24
Ⓓ 32 Ⓔ 40

12. What is the measure of $\angle RSX$?



Ⓐ 53.5° Ⓑ 73° Ⓒ 107°
Ⓓ 160° Ⓔ 163.5°

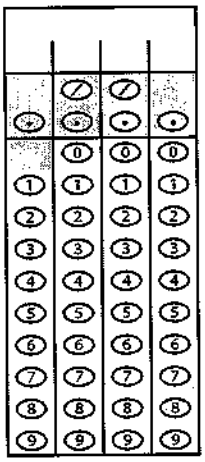
13. What is the most specific name for the quadrilateral?



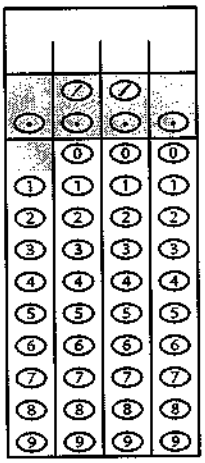
Ⓐ Parallelogram Ⓑ Trapezoid
Ⓒ Rectangle Ⓓ Rhombus
Ⓔ Square

Gridded Answer

14. The diagonals of rectangle $ABCD$ intersect at point Z. If $DZ = x + 6$ and $AC = 5x + 3$, what is the length of $\overline{AC}$?



15. $MNOP$ is a trapezoid with bases $\overline{MN}$ and $\overline{OP}$. If $MN = 25$ and $OP = 23$, what is the length of the midsegment of $MNOP$?



16. Two congruent sides of kite $ABCD$ have lengths of $2x + 8$ and $7x - 12$. What is the length of one of these two sides?