Tennessee Comprehensive Assessment Program

TCAP

TNReady — Geometry Part I

PRACTICE TEST

Student Name

Teacher Name

Tennessee Department of Education

Directions

This Practice Test booklet contains constructed-response items and selected-response items in Geometry. For constructed-response items, write your answer in the space provided. For selected-response items, circle the correct answer(s).

You MAY use a calculator with all test items in this test booklet.

Sample A: Constructed-Response

In triangle RST, $m\angle R = 15°$ and $m\angle S = 50°$. What is the measure, in degrees, of $\angle T$?

Write your answer in the space provided.

Sample B: Selected-Response

Given: $\triangle RST \sim \triangle JKL$, $\overline{RS} = 8$ centimeters, $\overline{JK} = 16$ centimeters, and $\overline{KL} = 14$ centimeters.

What is the length, in centimeters, of $\overline{ST}$?

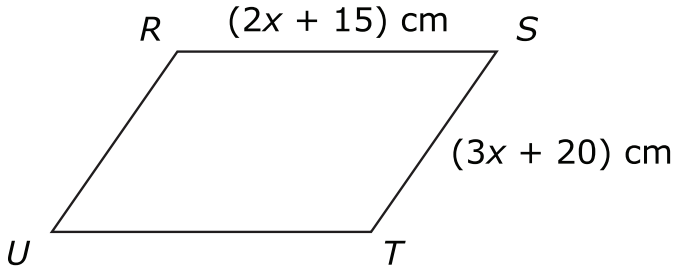
A. 6
B. 7
C. 22
D. 24

Sample Answers

A. 115°

B. Ⓐ ● Ⓒ Ⓓ

1. Parallelogram *RSTU* is shown. The perimeter of parallelogram *RSTU* is 50 centimeters.



What is the value of *x*?

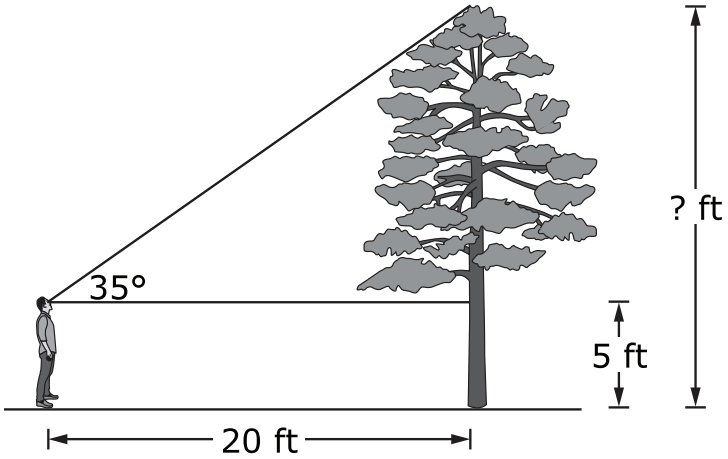
A. –5

B. –2

C. 3

D. 12

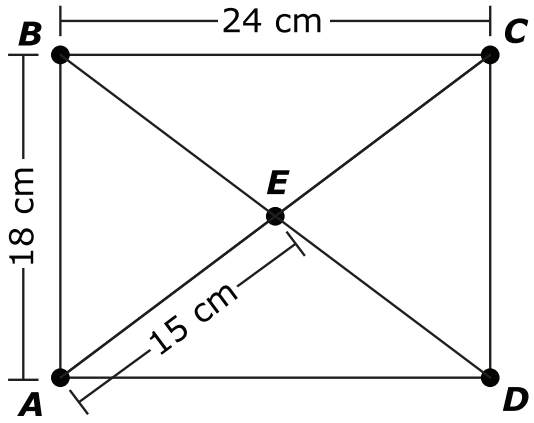
2. Chris is looking up at the top of a tree. He is standing 20 feet from the tree, and his line of sight is 35° from horizontal. His eyes are 5 feet above the ground.



To the nearest foot, how tall is the tree?

Write your answer in the space provided.

3. Rectangle *ABCD* is shown.



Circle the value that **best** completes each statement.

The measure of side *CD* is _____ cm. [15 18 24 30]

The measure of diagonal *BD* is _____ cm. [15 18 24 30]

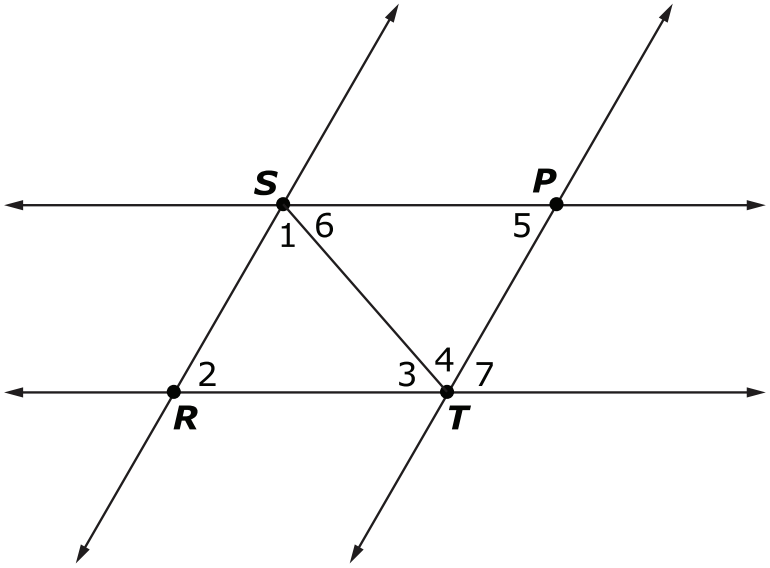
The perimeter of triangle *CDE* is _____ cm. [33 48 54 57]

4. A right triangle has leg lengths 0.3 centimeters and 0.4 centimeters. What is $\cos\theta$, where θ is the smallest angle of the triangle?

Write your answer in the space provided.

5. A proof is shown.

Given: $\triangle RST \cong \triangle PTS$, $\overleftrightarrow{SP} \parallel \overleftrightarrow{RT}$, and $\overleftrightarrow{SR} \parallel \overleftrightarrow{PT}$



Prove: The sum of the measures of the interior angles of $\triangle RST$ is 180°.

Using the list of reasons provided, write the correct reason for each statement in the proof.

Statement	**Reason**
1. $\triangle RST \cong \triangle PTS$	1.
2. $\angle 1 \cong \angle 4$	2.
3. $\angle 7 \cong \angle 2$	3.
4. $m\angle 4 + m\angle 7 + m\angle 3 = 180°$	4.
5. $m\angle 1 + m\angle 2 + m\angle 3 = 180°$	5.

Reasons:

Substitution

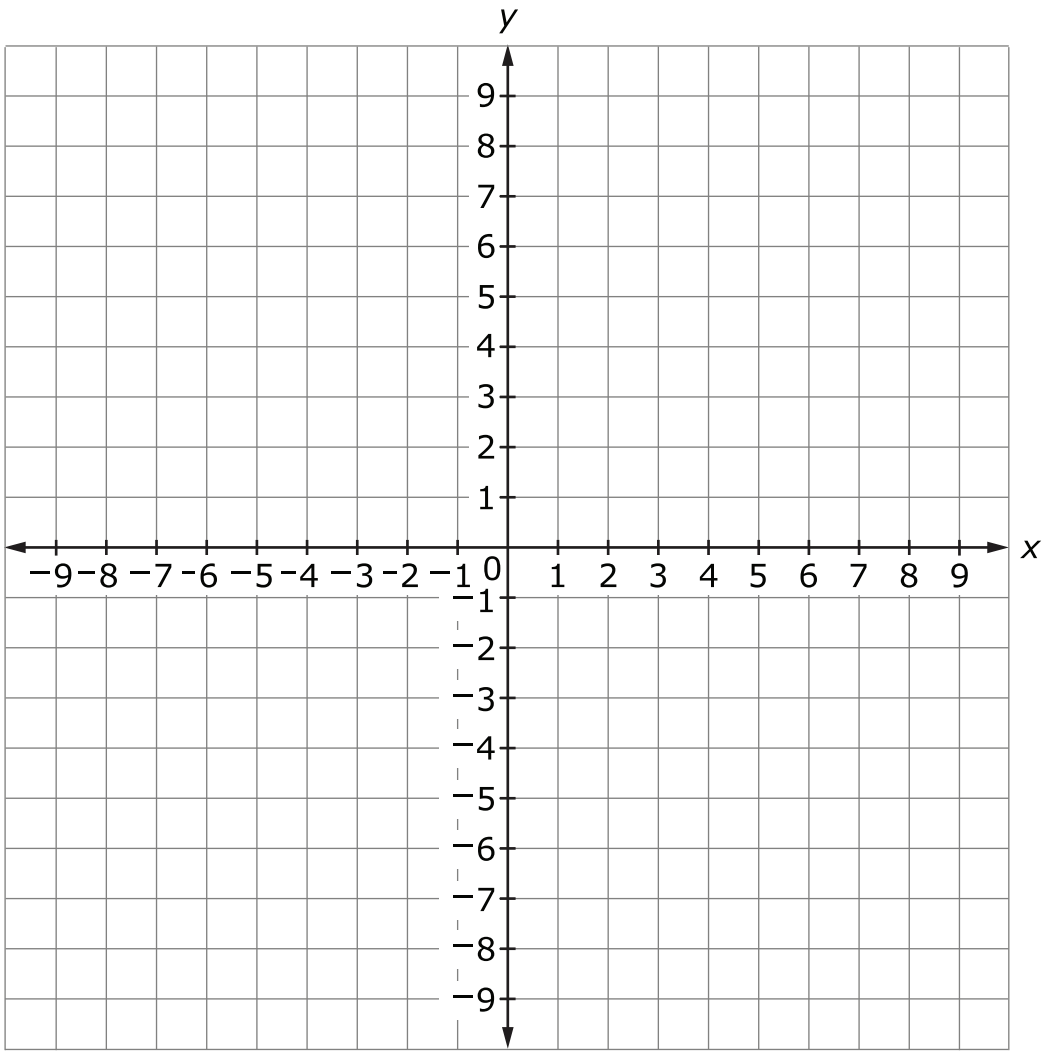
Alternate interior angles are congruent.

Corresponding angles are congruent.

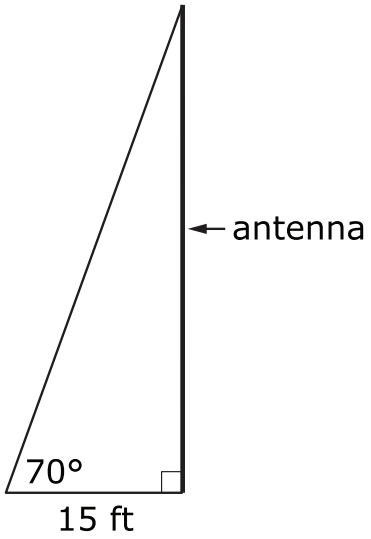
Angles 3, 4, and 7 form a line.

Given

6. Graph the line that is parallel to the line with equation $-2x + y = 1$ and that passes through the point $(1, -1)$.



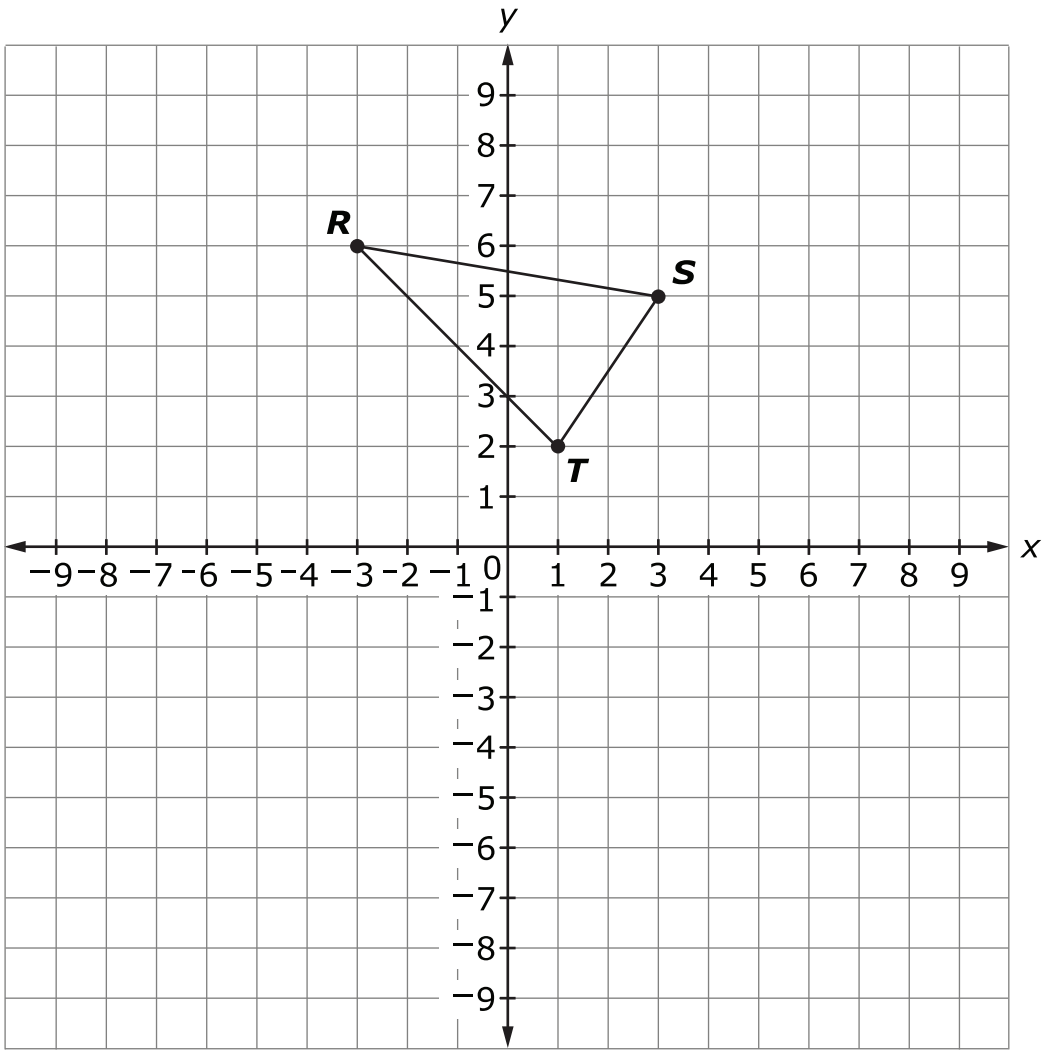
7. A support wire is attached to the top of an antenna. The support wire connects to the ground 15 feet from the bottom of the antenna. The support wire and the ground meet at an angle with measure 70°, as shown.



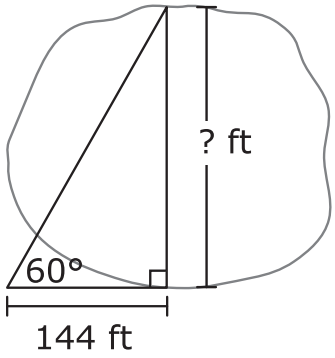
To the nearest foot, what is the height of the antenna?

Write your answer in the space provided.

8. Create the final image of $\triangle RST$ after reflecting first over the x-axis and then over the y-axis.



9. Mr. Miller is trying to determine the width of his pond. He makes the measurements shown.



To the nearest foot, what is the width of the pond?

Write your answer in the space provided.

10. Quadrilateral *LMNO* has coordinates *L*(5, 6), *M*(9, 8), *N*(11, 12), and *O*(7, 10). How can quadrilateral *LMNO* be classified?

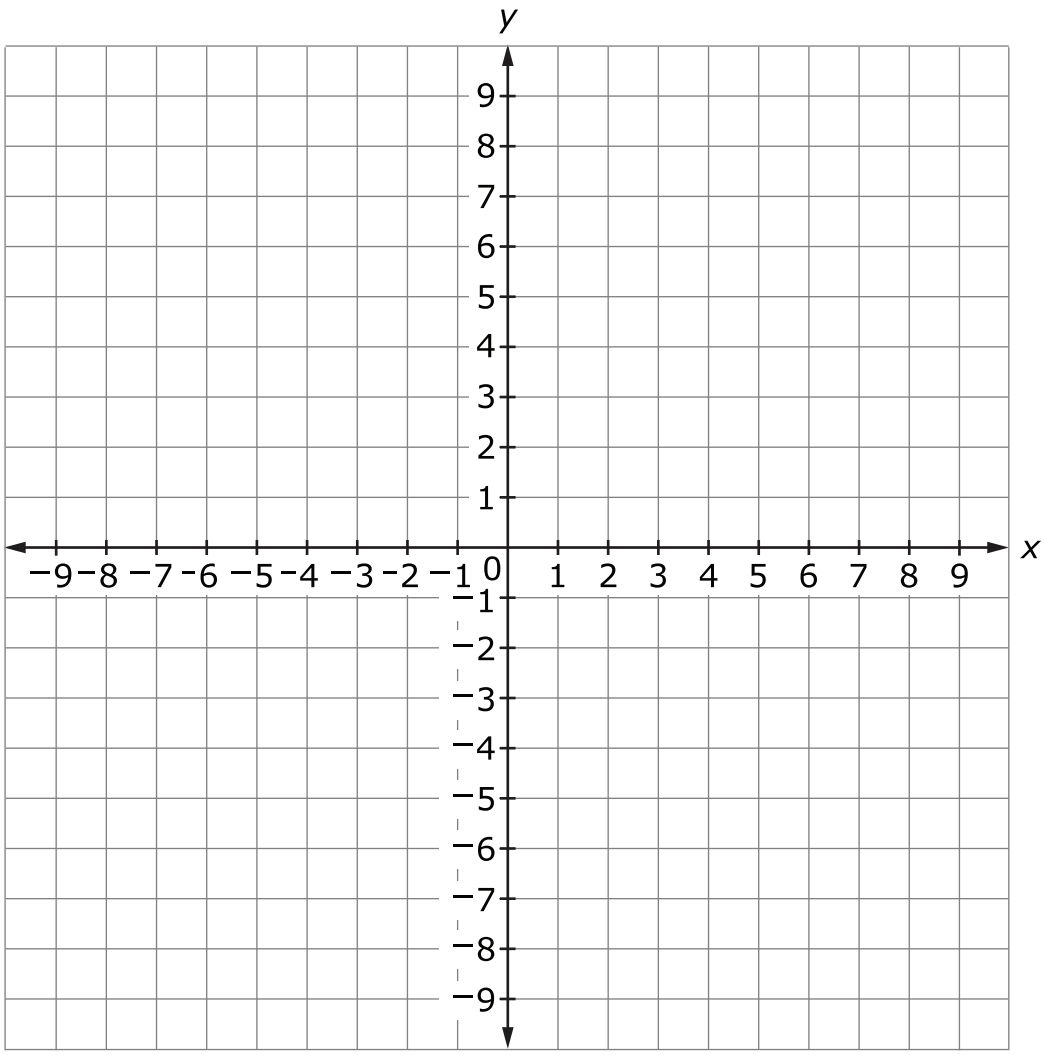
A. square

B. rhombus but not a square

C. rectangle but not a square

D. parallelogram but neither a rhombus nor a rectangle

11. Place the point that is $\frac{2}{3}$ of the way from R to S on the line segment with endpoints $R(-2, -2)$ and $S(4, 1)$.



12. $\triangle RST \sim \triangle UVW$. The dilation that maps $\triangle RST$ to $\triangle UVW$ has a dilation factor of $\frac{2}{3}$. The measure of angle *R* is 20°, and the measure of angle *S* is 100°.

What is the measure, in degrees, of angle *W*?

Write your answer in the space provided.