

Pre-AP Geometry Unit 2 - Tools and Techniques of Geometric Measurement Practice Test

Question 1

Look at the flag of Trinidad and Tobago below, then answer the question based on the appearance of the lines on the flag.

Which statement about the two white stripes in the flag of Trinidad and Tobago is correct?

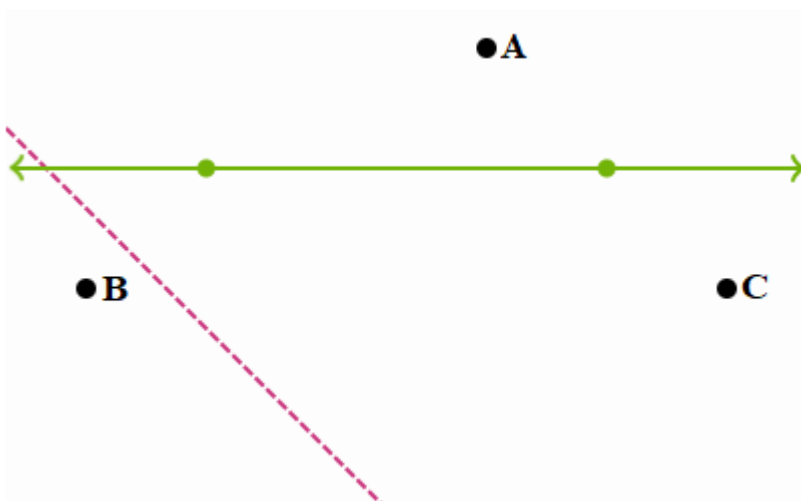


- A. The white stripes are parallel to each other.
- B. The white stripes are perpendicular to each other.
- C. The white stripes are neither parallel nor perpendicular to each other.

Question 2

Any pair of points can be connected by a line.

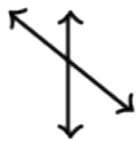
When connected, which pair of black points will make a line parallel to the dashed line segment?



- A. A and B
- B. B and C
- C. A and C

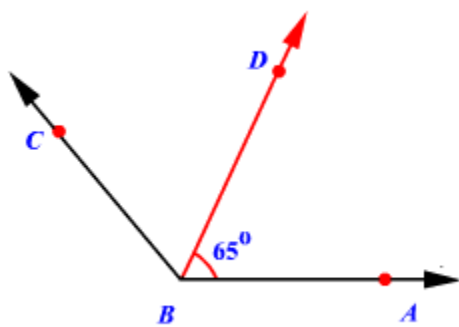
Question 3

Which term describes the figure?



- A. Parallel lines
- B. Perpendicular lines
- C. None of the above

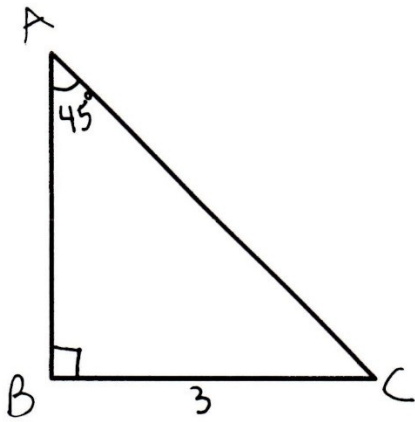
Question 4



In the figure,  $\overline{BD}$  is an angle bisector. Find the measure of  $\angle ABC$ .

- A.  $120^\circ$
- B.  $60^\circ$
- C.  $130^\circ$
- D.  $80^\circ$

Question 5



In  $\triangle ABC$ ,  $\angle BAC = 45^\circ$ .

$\angle BCA = ?$

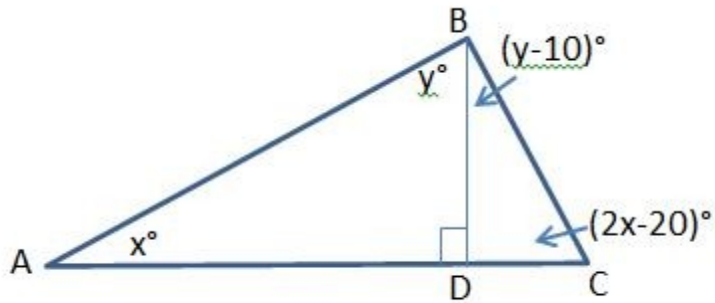
- A.  $90^\circ$
- B.  $45^\circ$
- C.  $135^\circ$
- D.  $60^\circ$

Question 6

Acute angles  $x$  and  $y$  are inside a right triangle. If  $x$  is four less than one third of 21, what is  $y$ ?

- A. 7
- B. 87
- C. 18
- D. 90
- E. 3

Question 7



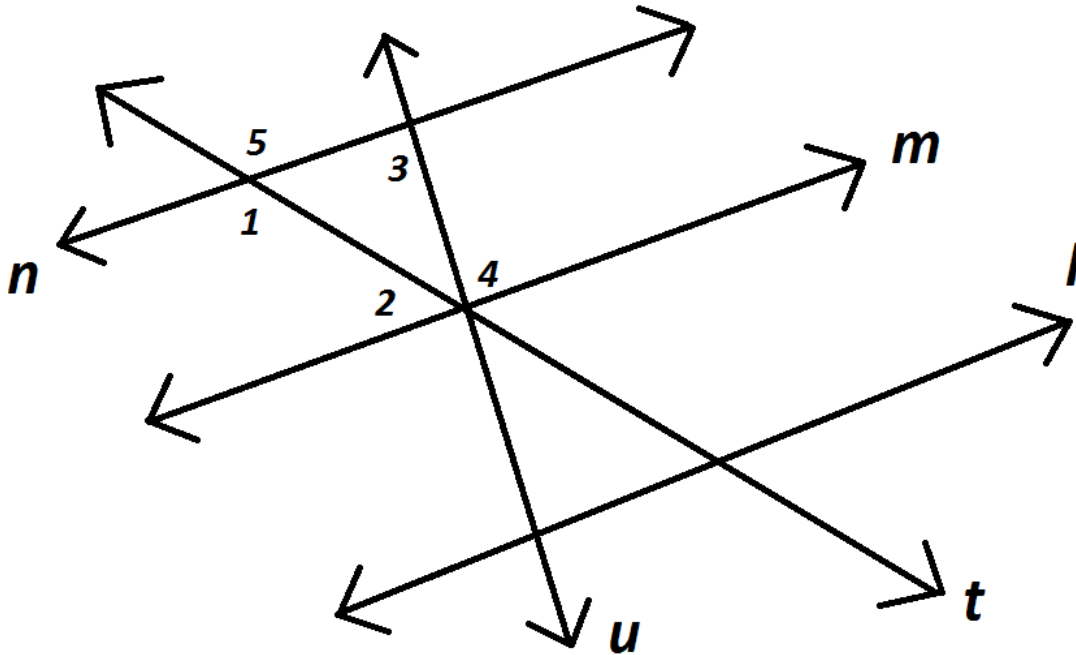
*Figure not drawn to scale.*

In the figure above, what is the positive difference, in degrees, between the measures of angle  $ACB$  and angle  $CBD$ ?

- A. 30
- B. 20
- C. 10
- D. 40
- E. 50

Question 8

Examine the diagram. Which of these conditions does *not* prove that  $m \parallel n$  ?



- A. Any of these statements can be used to prove that  $m \parallel n$ .
- B.  $m\angle 1 + m\angle 2 = 180$
- C.  $l \parallel m$  and  $l \parallel n$
- D.  $\angle 3 \cong \angle 4$
- E.  $\angle 1 \cong \angle 5$

Question 9

An isosceles triangle has an interior angle that measures  $120^\circ$ . What are the measures of its other two angles?

- A.  $60^\circ, 60^\circ$
- B. This triangle cannot exist.
- C.  $12^\circ, 120^\circ$
- D.  $30^\circ, 120^\circ$
- E.  $30^\circ, 30^\circ$

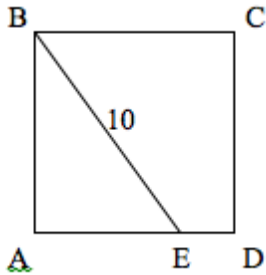
Question 10

Jim leaves his home and walks 10 minutes due west and 5 minutes due south. If Jim could walk a straight line from his current position back to his house, how far, in minutes, is Jim from home?

- A.  $\sqrt{10}$
- B.  $\sqrt{5}$

- C.  $5\sqrt{5}$
- D.  $6\sqrt{6}$

Question 11

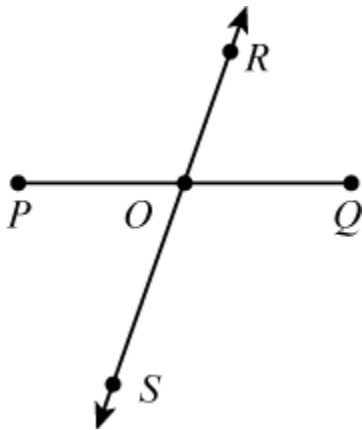


In the figure above, ABCD is a square and AE is three times the length of ED. What is the area of ABCD?

- A. 25
- B. 100
- C. 36
- D. 64
- E. 10

Question 12

RS is the segment bisector. If  $OQ = 32$  and  $PO = 4x$ , what does  $x$  equal?



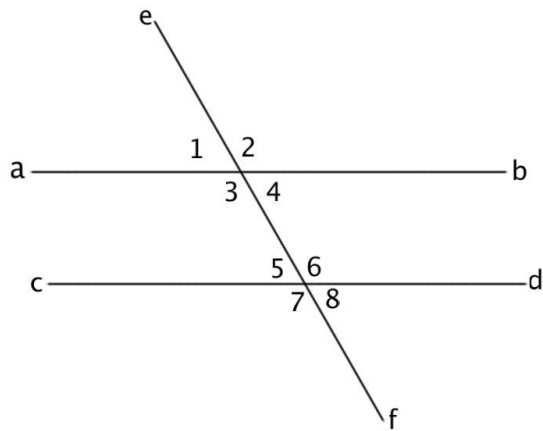
- A. 8
- B. 28
- C. 128
- D. 36

Question 13

What is the midpoint between  $(-1,3)$  and  $(7,-5)$ ?

- A.  $(4,-1)$
- B.  $(3,0)$
- C.  $(4,-4)$
- D.  $(3,-1)$
- E.  $(2,2)$

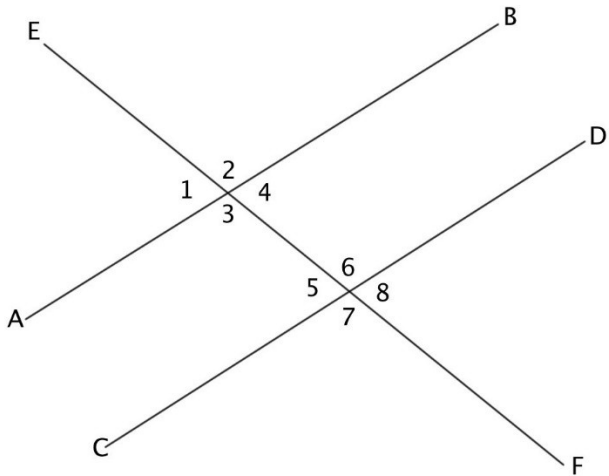
Question 14



If lines AB and CD are parallel, the sum of Angle 6 plus Angle 4 equals \_\_\_\_\_.

- A. 15 deg
- B. 90 deg
- C. 180 deg
- D. 45 deg
- E. 0 deg

Question 15

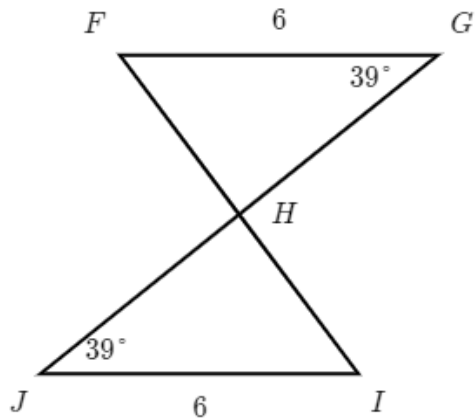


If lines AB and CD are parallel, angles 2 and 7 are congruent based on which theorem?

- A. Corresponding Angles
- B. Consecutive Angles
- C. There is not enough information to determine
- D. Alternate Interior Angles
- E. Alternate Exterior Angles

Question 16

Prove  $\triangle FGH \cong \triangle IJH$  .



Given the following statement, choose the correct congruence criterion for statement 4.

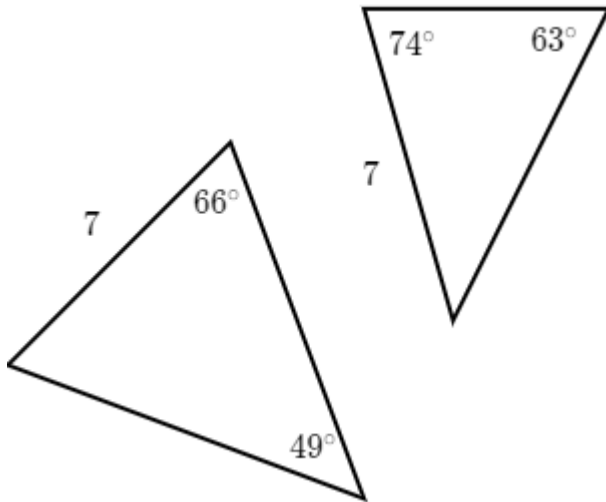


Statement	Reason
1 $m\angle G = m\angle J = 39^\circ$	
2 $FG = IJ = 6$	
3 $\angle GHF \cong \angle JHI$	
4 $\triangle FGH \cong \triangle IJH$	congruence criterion

- A. AAS congruence
- B. ASA congruence
- C. SAS congruence
- D. SSS congruence

Question 17

Consider the two triangles shown below.



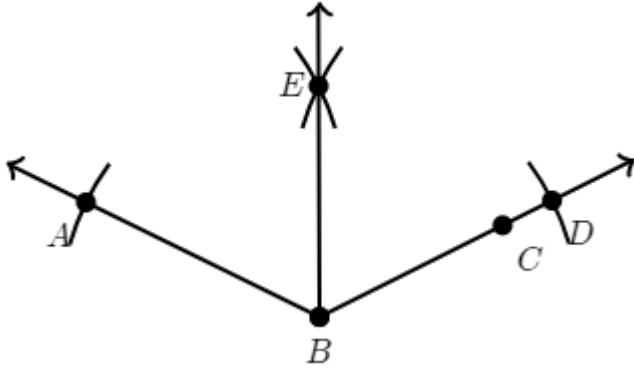
Note: The triangles are not drawn to scale.

Are the two triangles congruent?

- A. Yes
- B. No
- C. There is not enough information to say.

Question 18

Shinji started with angle  $\angle ABC$  and constructed ray  $\overline{BE}$ .

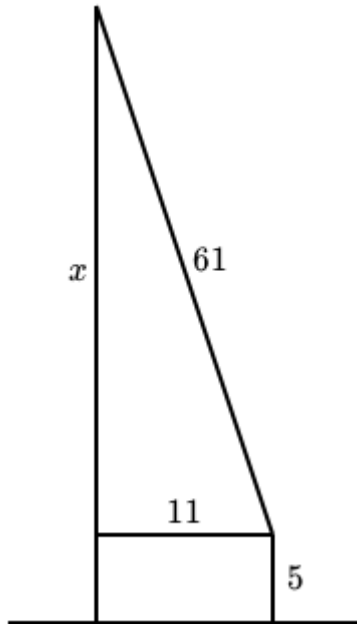


Which statements, if true, guarantee that  $\overline{BE}$  bisects  $\angle ABC$ .

- A.  $\overline{BA} \cong \overline{BD}$
- B.  $\overline{BA} \cong \overline{BC}$
- C.  $\overline{AE} \cong \overline{DE}$
- D.  $\overline{BD} \cong \overline{DE}$

Question 19

A monument in the shape of a right triangle sits on a rectangular pedestal that is 5 meters high by 11 meters long. The longest side of the triangular monument measures 61 meters.



How high off the ground is the top of the monument?

- A. 60 meters

- B.** 45 meters
- C.** 50 meters
- D.** 65 meters
- E.** 55.5 meters

## Answer Key

1. A
2. C
3. C
4. C
5. B
6. B
7. C
8. E
9. E
10. C
11. D
12. A
13. D
14. C
15. E
16. A
17. B
18. A, C
19. D