

NAME: \_\_\_\_\_

*A2.A.75: Determine the solution(s) from the SSA situation (ambiguous case)*

1. 080414b, P.I. A2.A.75  
How many distinct triangles can be formed if  $m\angle A = 30$ , side  $b = 12$ , and side  $a = 8$ ?  
[A] 3      [B] 0      [C] 1      [D] 2
2. 080519b, P.I. A2.A.75  
What is the total number of distinct triangles that can be constructed if  $AC = 13$ ,  $BC = 8$ , and  $m\angle A = 36$ ?  
[A] 1      [B] 3      [C] 2      [D] 0
3. 080311b, P.I. A2.A.75  
An architect commissions a contractor to produce a triangular window. The architect describes the window as  $\triangle ABC$ , where  $m\angle A = 50$ ,  $BC = 10$  inches, and  $AB = 12$  inches. How many distinct triangles can the contractor construct using these dimensions?  
[A] 2      [B] 0      [C] more than 2      [D] 1
4. 060416b, P.I. A2.A.75  
Sam is designing a triangular piece for a metal sculpture. He tells Martha that two of the sides of the piece are 40 inches and 15 inches, and the angle opposite the 40-inch side measures  $120^\circ$ . Martha decides to sketch the piece that Sam described. How many different triangles can she sketch that match Sam's description?  
[A] 2      [B] 1      [C] 3      [D] 0
5. 060620b, P.I. A2.A.75  
Sam needs to cut a triangle out of a sheet of paper. The only requirements that Sam must follow are that one of the angles must be  $60^\circ$ , the side opposite the  $60^\circ$  angle must be 40 centimeters, and one of the other sides must be 15 centimeters. How many different triangles can Sam make?  
[A] 0      [B] 1      [C] 3      [D] 2
6. 010426b, P.I. A2.A.75  
A landscape designer is designing a triangular garden with two sides that are 4 feet and 6 feet, respectively. The angle opposite the 4-foot side is  $30^\circ$ . How many distinct triangular gardens can the designer make using these measurements?
7. 060119b, P.I. A2.A.75  
Main Street and Central Avenue intersect, making an angle measuring  $34^\circ$ . Angela lives at the intersection of the two roads, and Caitlin lives on Central Avenue 10 miles from the intersection. If Leticia lives 7 miles from Caitlin, which conclusion is valid?  
[A] Leticia can live at one of three locations on Main Street.  
[B] Leticia can live at one of two locations on Main Street.  
[C] Leticia cannot live on Main Street.  
[D] Leticia can live at only one location on Main Street.
8. 010309b, P.I. A2.A.75  
In  $\triangle ABC$ , if  $AC = 12$ ,  $BC = 11$ , and  $m\angle A = 30$ , angle  $C$  could be  
[A] a right angle, only  
[B] an acute angle, only  
[C] either an obtuse angle or an acute angle  
[D] an obtuse angle, only
9. 010720b, P.I. A2.A.75  
In  $\triangle ABC$ ,  $m\angle A = 30$ ,  $a = 14$ , and  $b = 20$ . Which type of angle is  $\angle B$ ?  
[A] It must be a right angle.  
[B] It must be an obtuse angle.  
[C] It may be either an acute angle or an obtuse angle.  
[D] It must be an acute angle.

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[1] D

[2] C

[3] A

[4] B

[5] B

[2] Two, and appropriate work is shown or an appropriate diagram is drawn.

[1] Appropriate work is shown, but one computational error is made.

or [1] Appropriate work is shown, but one conceptual error is made.

or [1] Appropriate work is shown, but only one correct solution is found.

or [1] Two, but no work is shown.

[0] A zero response is completely incorrect, irrelevant, or incoherent or is a correct response that was obtained by an obviously

[6] incorrect procedure.

[7] B

[8] C

[9] C