

NAME: _____

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] 0 [B] 3 [C] 2 [D] 1
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] 3 [B] 2 [C] 0 [D] 1
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] 1 [B] 0 [C] more than 2 [D] 2
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° . 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° , the side opposite the 60° angle must be 40 centimeters, and one of the other sides must be 15 centimeters. How many different triangles can Sam make?
[A] 3 [B] 1 [C] 2 [D] 0
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° . 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° . 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 cannot live on Main Street.
[B] Leticia can live at only one location on Main Street.
[C] Leticia can live at one of three locations on Main Street.
[D] Leticia can live at one of two locations 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 an acute angle.
[B] It may be either an acute angle or an obtuse angle.
[C] It must be a right angle.
[D] It must be an obtuse angle.

[1] C _____

[2] B _____

[3] D _____

[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] D _____

[8] C _____

[9] B _____