

NAME: _____

1. 080214a, P.I. G.G.33

If the lengths of two sides of a triangle are 4 and 10, what could be the length of the third side?

[A] 8 [B] 16 [C] 6 [D] 14

2. 080018a, P.I. G.G.33

If two sides of a triangle are 1 and 3, the third side may be

[A] 2 [B] 3 [C] 5 [D] 4

3. 080520a, P.I. G.G.33

Sara is building a triangular pen for her pet rabbit. If two of the sides measure 8 feet and 15 feet, the length of the third side could be

[A] 23 ft [B] 13 ft [C] 3 ft [D] 7 ft

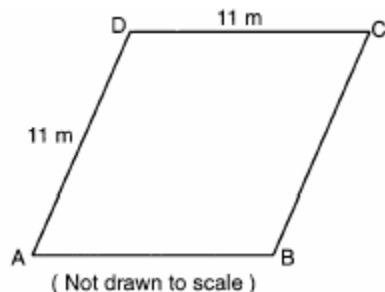
4. 069905a, P.I. G.G.33

The direct distance between city *A* and city *B* is 200 miles. The direct distance between city *B* and city *C* is 300 miles. Which could be the direct distance between city *C* and city *A*?

[A] 650 miles [B] 350 miles
[C] 50 miles [D] 550 miles

5. 010010a, P.I. G.G.33

A plot of land is in the shape of rhombus *ABCD* as shown below.



Which can *not* be the length of diagonal *AC*?

[A] 24 m [B] 4 m [C] 11 m [D] 18 m

6. 080916ge, P.I. G.G.33

Which set of numbers represents the lengths of the sides of a triangle?

[A] {5, 18, 13} [B] {26, 8, 15}
[C] {16, 24, 7} [D] {6, 17, 22}

7. 080425a, P.I. G.G.33

Which set can *not* represent the lengths of the sides of a triangle?

[A] {8,8,8} [B] {7,7,12}
[C] {4,5,6} [D] {5,5,11}

8. 060515a, P.I. G.G.33

Which set could *not* represent the lengths of the sides of a triangle?

[A] {3,4,5} [B] {5,10,12}
[C] {2,5,9} [D] {7,9,11}

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9. 010534a, P.I. G.G.33

José wants to build a triangular pen for his pet rabbit. He has three lengths of boards already cut that measure 7 feet, 8 feet, and 16 feet. Explain why José cannot construct a pen in the shape of a triangle with sides of 7 feet, 8 feet, and 16 feet.

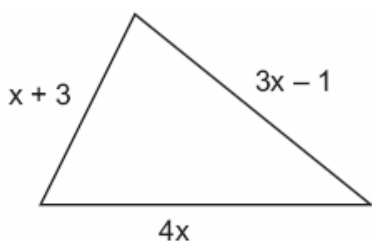
10. 080830a, P.I. G.G.33

Phil is cutting a triangular piece of tile. If the triangle is scalene, which set of numbers could represent the lengths of the sides?

- [A] {3,5,8} [B] {4,5,6}
 [C] {5,5,8} [D] {2,4,7}

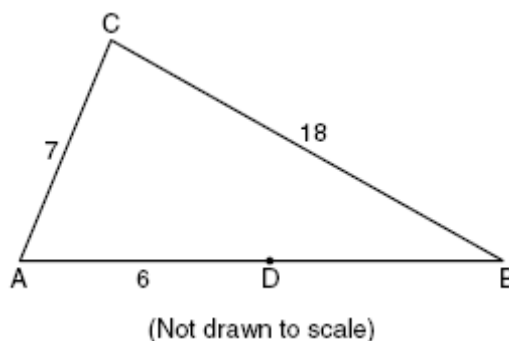
11. 060227a, P.I. G.G.33

The plot of land illustrated in the accompanying diagram has a perimeter of 34 yards. Find the length, in yards, of *each* side of the figure. Could these measures actually represent the measures of the sides of a triangle? Explain your answer.



12. fall0819ge, P.I. G.G.33

In the diagram below of $\triangle ABC$, D is a point on \overline{AB} , $AC = 7$, $AD = 6$, and $BC = 18$.



The length of \overline{DB} could be

- [A] 25 [B] 5 [C] 19 [D] 12

13. 080120b, P.I. G.G.33

A box contains one 2-inch rod, one 3-inch rod, one 4-inch rod, and one 5-inch rod. What is the maximum number of different triangles that can be made using these rods as sides?

- [A] 1 [B] 2 [C] 3 [D] 4

14. 060924ge, P.I. G.G.33

Side \overline{PQ} of $\triangle PQR$ is extended through Q to point T . Which statement is *not* always true?

- [A] $m\angle RQT > m\angle PQR$
 [B] $m\angle RQT = m\angle P + m\angle R$
 [C] $m\angle RQT > m\angle R$
 [D] $m\angle RQT > m\angle P$

[1] A _____

[2] B _____

[3] B _____

[4] B _____

[5] A _____

[6] D _____

[7] D _____

[8] C _____

[2] The statements $7 + 8 = 15$ and “15 is not greater than 16” are written or the explanation is given that the sum of any two sides of a triangle must be greater than the third side.

[1] An explanation is written that includes a reference to the triangle inequality, but the explanation is not complete or an incorrect conclusion is stated.

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

[9] incorrect procedure. _____

[10] B _____

[3] 7, 11, 16, and yes, and appropriate work is shown, and an appropriate explanation of the Triangle Inequality theorem is given.

[2] 7, 11, 16, and yes, and appropriate work is shown, but no explanation or an incorrect explanation of the Triangle Inequality theorem is given.

or [2] One computational error is made, but appropriate substitution is shown, and an appropriate explanation is given.

or [2] The correct equation is written but not solved, but the Triangle Inequality theorem is stated correctly.

[1] Appropriate work is shown, and $x = 4$ is determined, but no further work is shown.

or [1] The Triangle Inequality theorem is stated correctly but not evaluated for the sides, or the correct equation is written, but no further work is shown.

or [1] 7, 11, 16, and yes, 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

[11] incorrect procedure. _____

[12] D _____

[13] C _____

[14] A _____