Constructing triangles

October 21, 2013

1 x0a2c8d4a7e3a85b9

How many triangles can be drawn where we know two angles and the side length ~~is known between two known~~ between the two angles?

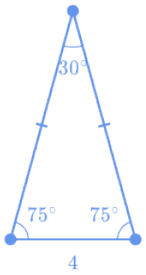
Ans None

Only one

More than one

Hint 1 Let's draw an example of a triangle where the side length is known between ~~2~~ two angles. Let's look at when a side of length ~~4~~ 4 is between a pair of ~~75°~~ 75° angles.

Hint 2 The other two sides can be drawn at ~~75°~~ 75° angles and are equal in length. The sides meet at a ~~30°~~ 30° angle to complete the triangle.



This triangle is unique, meaning no other triangle exists ~~that satisfies these conditions~~with the same shape and size.

Hint 3 When the side length is known between two known angles, only one triangle can be drawn.

Tags: Constructing triangles, CC.7.G.A.2
Version: ~~e08d4e9d.. 2013-10-20~~ 4a925246.. 2013-10-21

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2 x18341f6f8d24d96e

How many triangles can be drawn with side lengths 9, 12 and 15?

Ans None

Only one

More than one

Hint 1 A triangle is a plane figure with ~~3~~ three straight sides and ~~3~~ three angles. Can we satisfy the definition given the conditions? Let's try to draw a triangle given the conditions.

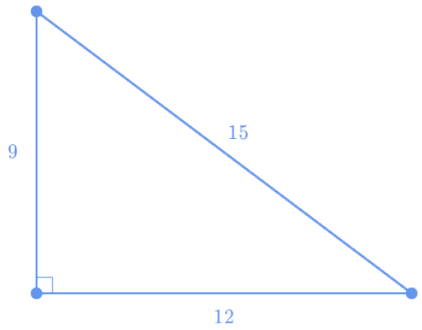
Hint 2 In general, ~~the longest~~ any side of a triangle ~~must be~~ is always shorter than the sum of the ~~two other sides. Because 9 + 12 = 21, the two sides~~9 and 12 ~~meet to form 2 angles with the side of length 15. Thus, we~~ other two sides:

$$15 < 9 + 12$$

$$12 < 9 + 15$$

$$9 < 12 + 15$$

We can create a triangle ~~whose sides to satisfy the given conditions~~with a unique size and shape.



Hint 3 Given the conditions, only one triangle can be drawn.

Tags: Constructing triangles, CC.7.G.A.2
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3 x1afa3df30210708e

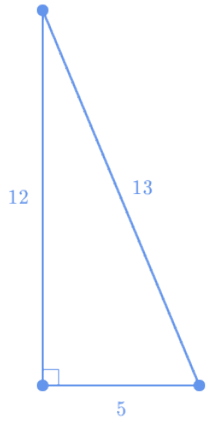
Draw a right triangle with side lengths $5a$, $12a$ and $13a$, where a is any positive number.

~~**Given these criteria, is the triangle unique~~ **Is there a unique triangle that satisfies the given conditions?** [[? interactive-graph 1]]

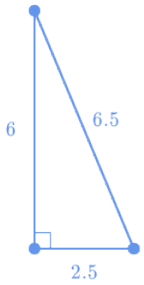
Ans Yes
No

Hint 1 Lets start by choosing a value for a where ~~$a > 0$~~a is any positive number, then we can draw a right triangle with side lengths $5a$, $12a$ and $13a$.

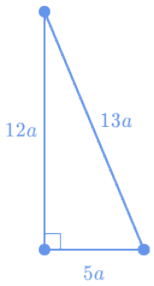
Hint 2 Choosing $a = 1$, we can draw a right triangle with side lengths 5, 12 and 13. ~~This is a right triangle.~~



Hint 3 Choosing $a = 0.5$, we can draw a right triangle with side lengths 2.5, 6 and 6.5.



Hint 4 The triangle is not unique. We can let a be any ~~nonzero~~ positive number and draw many triangles with the same shape but different sizes.



Tags: Constructing triangles, CC.7.G.A.2
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4 x1c875467bbf94500

Draw a triangle with side length 4 between two 70° angles.
~~**Given these criteria is the triangle unique~~ **Is there a unique triangle that satisfies the given conditions?** [[? interactive-graph 1]]

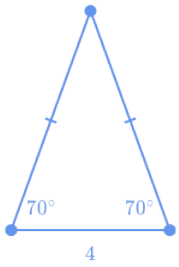
Ans Yes
No

Hint 1 Lets start by drawing the side whose length is 4.

Hint 2 From the side 4, lets draw ~~2~~ two 70° angles. Since we have ~~2~~ two equal angles, we have an isosceles triangle. An isosceles triangle has at least ~~2~~ two sides equal in length.
Since we have ~~2~~ two 70° angles, the third angle must be 40°. The sum of ~~3~~ three angles in a triangle will always be 180°.

Hint 3 We know the measure of ~~2~~ two angles and the length of the side between the angles, so we can draw only ~~1~~ one triangle.

Hint 4 The triangle is unique.



Tags: Constructing triangles, CC.7.G.A.2
Version: ~~dd847b40.. 2013-10-20~~ 7647d185.. 2013-10-21

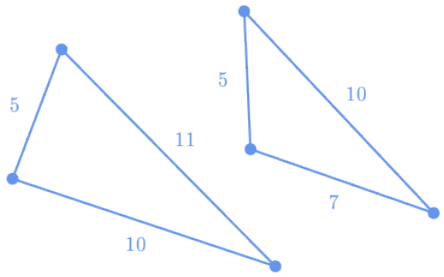
5 x1da87b180aca0e3d

How many triangles can be drawn which have side lengths of 5 and 10?

Ans None
Only one
More than one

Hint 1 We do not know the length of the third side so we are free to choose any length. Thus, we cannot create a unique triangle with only two side lengths.

Hint 2 We can draw many triangles with side lengths 5 and 10.



Hint 3 If we only know ~~2~~ two side lengths, more than one triangle can be drawn.

Tags: Constructing triangles, CC.7.G.A.2
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6 x25470998d7b41ee4

How many triangles can be drawn which have two 45° angles and two sides of length 2?

Ans None
Only one
More than one

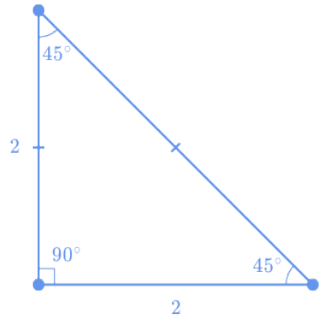
Hint 1 A triangle is a plane figure with ~~3~~ three straight sides and ~~3~~ three angles. The ~~3~~ three angles always add up to 180°.
~~We~~ Since we have two 45° angles~~. The third angle x~~, the third angle is 90°:

$$\begin{aligned} 180° &= 45° + 45° + x \\ 180° &= 90° + x \\ x &= 180° - 90° \\ x &= 90° \end{aligned}$$

$$= 180° - 2 \cdot 45°$$
$$= 90°$$

~~The third angle x is 90° so let~~Let's draw a right triangle.

Hint 2 We can draw a right triangle and make two of its sides of length 2. The sides with length 2 ~~are in~~ must be between the 45° and 90° angles.



This triangle is unique, meaning no other triangle exists with exactly the same shape and size.

Hint 3 Given the conditions, only one triangle can be drawn.

Tags: Constructing triangles, CC.7.G.A.2
Version: ~~5c0563e0.. 2013-10-20~~ 2c26d431.. 2013-10-21

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7 x2bce84b97313fd2b

Draw a triangle ~~where the~~ with two angles 31° and 90° where side length 3 is ~~not between~~ *not* between the two angles 31° and 90°.
~~**Given these criteria is the triangle unique~~ **Is there a unique triangle that satisfies the given conditions?** [[? interactive-graph 1]]

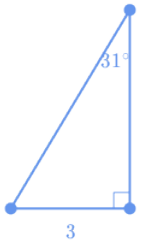
Ans Yes
No

Hint 1 Lets start by drawing a right angle which is 90°.
Then, let's draw the side of length 3 next to the right angle, so our base is length 3.

Hint 2 The length of 3 is not between ~~2~~ two angles 31° and 90°.
Since we drew the side of length 3 next to the right angle, the 31° angle must be *opposite* the side of length 3 .

Hint 3 We know the measure of ~~2~~ two angles and the length of ~~1~~ one side not between the angles, so we can draw only ~~1~~ one triangle.

Hint 4 The triangle is unique.



Tags: Constructing triangles, CC.7.G.A.2
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8 x31c216ff88dad8e7

How many triangles can we draw with side lengths 4, 4 and 7?

Ans None
Only one
More than one

Hint 1 A triangle is a plane figure with ~~3~~ three straight sides and ~~3~~ three angles. Can we satisfy the definition given the conditions? Let's try to draw a triangle given the conditions.

Hint 2 In general, ~~the longest~~ any side of a triangle ~~must be~~ is always shorter than the sum of the ~~two other sides. Because 4 + 4 = 8, the two sides4 and 4 meet to form 2 angles with the side of length 7.~~ other two sides:

$$7 < 4 + 4$$

$$4 < 7 + 4$$

We can create ~~3 angles with the 3 sides to satisfy the definition of a triangle~~ a triangle with a unique size and shape.

Hint 3 Given the conditions, only one triangle can be drawn.

Tags: Constructing triangles, CC.7.G.A.2
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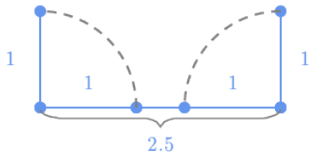
9 x38cc51ab93842600

How many triangles can be drawn with side lengths 1, 1 and ~~2~~2.5?

Ans None
Only one
More than one

Hint 1 A triangle is a plane figure with ~~3~~ three straight sides and ~~3~~ three angles. Can we satisfy the definition given the conditions? Let's try to draw a triangle given the conditions.

Hint 2 In general, ~~the longest~~ any side of a triangle ~~must be~~ is always shorter than the sum of the ~~two other~~ other two sides. Because ~~1 + 1 = 2~~2.5 > 1 + 1, the two ~~side lengths~~ sides 1 and 1 cannot meet to form a third angle ~~.~~ over the third side 2.5.



We cannot create ~~3~~ three angles to satisfy the definition of a triangle.

Hint 3 Given the conditions, no triangles can be drawn.

Tags: Constructing triangles, CC.7.G.A.2
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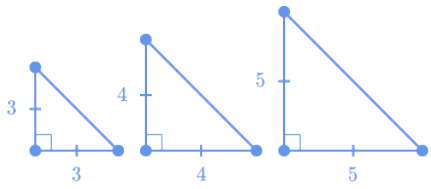
10 x4c335bfbee0cba92

Draw a right triangle with at least ~~2~~ two sides of equal length.
~~**Given these criteria is the triangle unique~~ **Is there a unique triangle that satisfies the given conditions?** [[? interactive-graph 1]]

Ans Yes
No

Hint 1 Lets start by drawing. A right triangle has one 90° angle.
A triangle with at least ~~2~~ two equal side lengths is called an isosceles triangle. We do not know the side lengths.

Hint 2 We can draw many right triangles with ~~2~~ two sides of equal length.



Hint 3 The triangle is not unique.

Tags: Constructing triangles, CC.7.G.A.2
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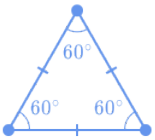
11 x531e157ba7c498eb

How many triangles can be drawn where the measures of all ~~3~~ three angles are the same?

Ans None
Only one
More than one

Hint 1 A triangle is a plane figure with ~~3~~ three straight sides and ~~3~~ three angles. What triangle or triangles would satisfy the conditions?
Let's try to draw a triangle where the measures of all ~~3~~ three angles is the same.

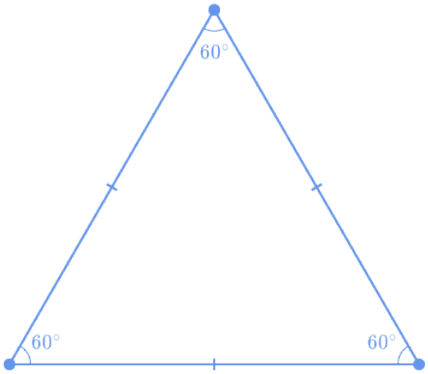
Hint 2 The ~~3~~ three angle measures in a triangle must sum to ~~180°~~180°. Because we know the measure of all ~~3~~ three angles must be the same, we know all ~~3~~ three angles have measure $\frac{180°}{3} = 60°$ $\frac{180°}{3} = 60°$.



This is an equilateral triangle.

Hint 3 Is this triangle unique or do other equilateral triangles exist with a different size?

We can draw many equilateral triangles with the same shape but different sizes.



Hint 4 More than one triangle can be drawn with all ~~3~~ three angles measures equal.

Tags: Constructing triangles, CC.7.G.A.2
Version: ~~47228a28.. 2013-10-20~~ 1ab79063.. 2013-10-21

12 x572fecbc70b353aa

Draw a right triangle that is also an isosceles triangle and has two sides of length 3.

~~**Given these criteria is the triangle unique~~ **Is there a unique triangle that satisfies the given conditions?** [[? interactive-graph 1]]

Ans Yes
No

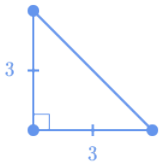
Hint 1 Lets start by drawing. A right triangle has one 90° angle.

An isosceles triangle has at least ~~2~~ two side lengths equal. We are given ~~2~~ two side lengths both equal to 3.

Hint 2 Let's draw ~~1~~ one side length 3 as the height vertically (up and down) from the 90° angle. Let's draw the other side length 3 as the base horizontally (left and right) from the 90° angle.

Hint 3 Since we are given the measures of ~~2~~ two sides and the angle between them, we can draw only ~~1~~ one triangle.

Hint 4 The triangle is unique.



Tags: Constructing triangles, CC.7.G.A.2
Version: ~~b8c14e25.. 2013-10-20~~ 42221dd1.. 2013-10-21

13 x651844ecfaac48e9

Draw a right triangle with two 45° angles.

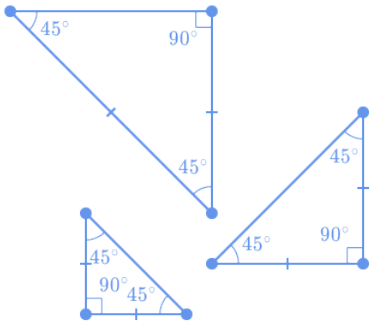
~~**Given these criteria is the triangle unique~~ **Is there a unique triangle that satisfies the given conditions?** [[? interactive-graph 1]]

Ans Yes
No

Hint 1 Lets start by drawing. A right triangle has one 90° angle.

The triangle we want is an isosceles right triangle. An isosceles right triangle has two 45° angles.

Hint 2 We know the measure of all ~~3~~ three angles but not the length of any side. Therefore, we can draw many triangles of various sizes all with a pair of 45° angles.



Hint 3 The triangle is not unique.

Tags: Constructing triangles, CC.7.G.A.2
Version: ~~525a66e3.. 2013-10-20~~ fb842816.. 2013-10-21

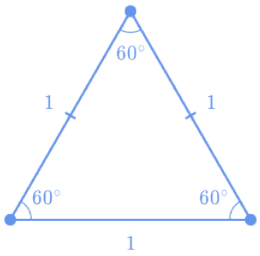
14 x6763ceb1ec0ceb41

How many triangles can be drawn where the lengths of all ~~3~~ three sides are equal to 1?

Ans None
Only one
More than one

Hint 1 A triangle is a plane figure with ~~3~~ three straight sides and ~~3~~ three angles. Is there a triangle or triangles that satisfy the conditions? Let's try to draw a triangle with all side lengths equal to ~~1~~1.

Hint 2 The result is an equilateral triangle with equal side lengths and equal angles measures:



This triangle is unique, meaning no other triangle exists that has all sides equal to ~~1~~1.

Hint 3 In general, if the lengths of all ~~3~~ three sides are known, only one triangle can be drawn.

Tags: Constructing triangles, CC.7.G.A.2
Version: ~~ca634aaf.. 2013-10-20~~ e412934c.. 2013-10-21

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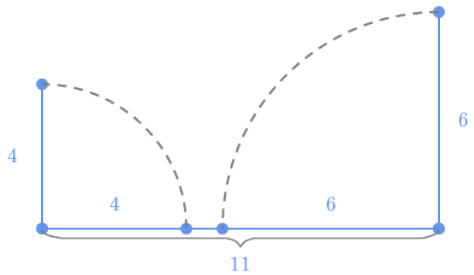
15 x67ee6010588311f2

How many triangles can be drawn with side lengths 4, 6 and ~~10~~11?

Ans None
Only one
More than one

Hint 1 A triangle is a plane figure with ~~3~~ three straight sides and ~~3~~ three angles. Can we satisfy the definition given the conditions? Let's try to draw a triangle given the conditions.

Hint 2 In general, ~~the longest~~ any side of a triangle ~~must be~~ is always shorter than the sum of the ~~two other~~ other two sides. Because ~~4 + 6 = 10~~11 > 6 + 4, the two sides ~~4 and~~ 6 and 4 cannot meet to form a third angle ~~.~~ over the third side 11.



We cannot create ~~3~~ three angles to satisfy the definition of a triangle.

Hint 3 Given the conditions, no triangles can be drawn.

Tags: Constructing triangles, CC.7.G.A.2
Version: ~~9421cd19.. 2013-10-18~~ edcac7f5.. 2013-10-21

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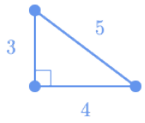
16 x67fd10caf4f54df2

Draw a right triangle with side lengths $3a$, $4a$ and $5a$, where a is any positive number.
~~**Given these criteria is the triangle unique~~ **Is there a unique triangle that satisfies the given conditions?** [[? interactive-graph 1]]

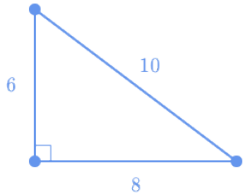
Ans Yes
No

Hint 1 Lets start by choosing a value for a where ~~$a > 0$~~ a is any positive number, then we can draw a right triangle with side lengths $3a$, $4a$ and $5a$.

Hint 2 If $a = 1$, then we can draw a right triangle with side lengths 3, 4 and 5. ~~This is a right triangle.~~

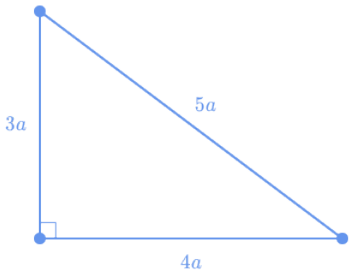


Hint 3 If $a = 2$, then we can draw a right triangle with side lengths 6, 8 and 10.



We can let a be any positive number and draw many triangles of same shape but different sizes.

Hint 4 The triangle is not unique. Multiple triangles satisfy the conditions.



Tags: Constructing triangles, CC.7.G.A.2
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17 x6d7be6276bcb5815

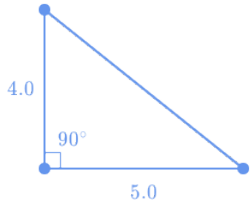
Draw a right triangle with a height 4 and base 5.
~~**Given these criteria is the triangle unique.**~~ **Is there a unique triangle that satisfies the given conditions?** [[? interactive-graph 1]]

Ans Yes
No

Hint 1 Lets start by drawing. A right triangle has a 90° angle.
The height of length 4 is drawn vertically (up and down) from the 90° angle. The base of length 5 is drawn horizontally (left and right) from the 90° angle.

Hint 2 Since we are given the measures of ~~2~~ two sides and the angle between them, we can draw only ~~1~~ one triangle.

Hint 3 The triangle is unique.



Tags: Constructing triangles, CC.7.G.A.2
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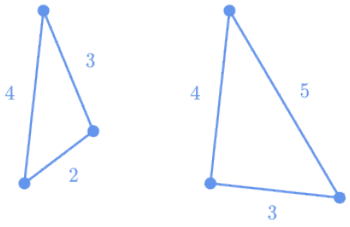
18 x72d893d1e3229dfd

How many triangles can we draw with side lengths 3 and 4?

Ans None
Only one
More than one

Hint 1 We can draw many triangles with side lengths 3 and 4.



Hint 2 Without knowing at least ~~1~~ one angle measure, we cannot create a unique triangle with side lengths ~~3 and 4~~3 and 4.

Hint 3 If we only know ~~2~~ two side lengths, more than one triangle can be drawn.

Tags: Constructing triangles, CC.7.G.A.2
Version: ~~af92749e.. 2013-10-20~~ 7f5a7177.. 2013-10-21

19 x892857b71e427c39

How many triangles can be drawn with angles 60°, 60° and 70°?

Ans None
Only one
More than one

Hint 1 A triangle is a plane figure with ~~3~~ three straight sides and ~~3~~ three angles. In a triangle, the sum of the three angle measures is 180°.

Hint 2 Let's add together the angles measures 60°, 60° and 70°:

$$\begin{aligned}\text{sum of angle measures} &= 60° + 60° + 70° \\ &= 120° + 70° \\ &= 190° \\ &> 180°\end{aligned}$$

$$\begin{aligned}\text{sum of angle measures} &= 60° + 60° + 70° \\ &= 120° + 70° \\ &= 190°\end{aligned}$$

The sum of the ~~3~~ three angle measures is greater than 180°.

Hint 3 No triangle can be drawn that satisfies the given conditions.

Tags: Constructing triangles, CC.7.G.A.2
Version: ~~88ce2f2f.. 2013-10-20~~ b659944d.. 2013-10-21

20 xb880da8414b8f195

Draw an obtuse triangle with angles 45°, 35° and 100°.

Is there a unique triangle that satisfies the given conditions? [[? interactive-graph 1]]

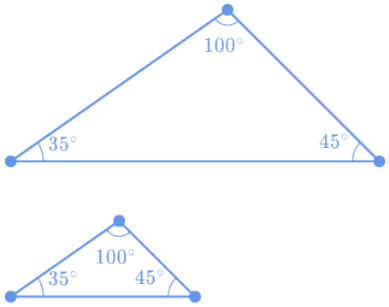
Ans Yes
No

Hint 1 Lets start by drawing. While keeping one angle constant, we can change the side lengths to create one of the other two angles.

For example, while keeping a 45° angle, we can change the side lengths to create the 35° angle. The third angle will have measure 100°.

Hint 2 We know the measure of three angles but not the length of any side. We can draw many triangles of same shape but different sizes.

Hint 3 The triangle is not unique.



Tags: Constructing triangles, CC.7.G.A.2
Version: 6879cae0.. 2013-10-21

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21 xb9aa47b3de982d55

Draw an isosceles triangle with two 70° angles.

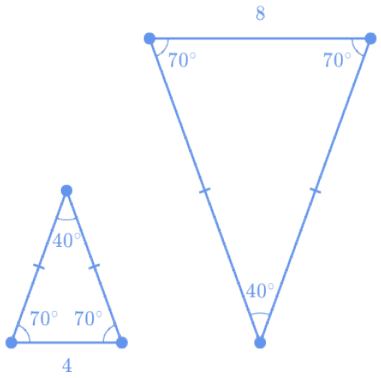
~~**Given these criteria is the triangle unique~~ **Is there a unique triangle that satisfies the given conditions?** [[? interactive-graph 1]]

Ans Yes
No

Hint 1 Lets start by drawing an isosceles triangle with ~~2~~ two 70° angles. An isosceles triangle has at least ~~2~~ two side lengths equal and ~~2~~ two angles equal.

Hint 2 We do not know the side lengths, so we can draw many triangles.

Hint 3 The triangle is not unique.



Tags: Constructing triangles, CC.7.G.A.2
Version: ~~3bc9edc0.. 2013-10-18~~ c30a9e63.. 2013-10-21

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22 xbd061a8700fced6c

How many right triangles can be drawn with angles 40° and 60°?

Ans None
Only one
More than one

Hint 1 A triangle is a plane figure with ~~3~~ three straight sides and ~~3~~ three angles. In a triangle, the sum of the three angle measures is 180°.

A right triangle has a 90° angle.

Hint 2 Let's add together the angle measures 40°, 60° and 90°:

$$\begin{aligned}\text{sum of angle measures} &= 40° + 60° + 90° \\ &= 190° \\ &> 180°\end{aligned}$$

$$\begin{aligned}\text{sum of angle measures} &= 40° + 60° + 90° \\ &= 190°\end{aligned}$$

The sum of the ~~3~~ three angles is greater than 180°.

Hint 3 No triangle can be drawn that satisfies the given conditions.

Tags: Constructing triangles, CC.7.G.A.2
Version: ~~69a54880.. 2013-10-20~~ 24dc4864.. 2013-10-21

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23 xc001c788d01d9e5f

Draw a triangle with two angles 58° and 90° where side length 4 is ~~not between~~ *not* between the two angles 58° and 90°.

~~**Given these criteria is the triangle unique~~ **Is there a unique triangle that satisfies the given conditions?** [[? interactive-graph 1]]

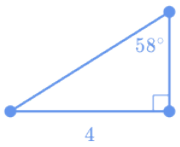
Ans Yes
No

Hint 1 Lets start by drawing a right angle which is 90°.
Then, let's draw the side of length 4 next to the right angle, so our base has a length of 4.

Hint 2 The side of length 4 is not between ~~2~~ two angles 58° and 90°.
Since we drew the side of length 4 next to the right angle, the 58° angle must be *opposite* the side of length 4 .

Hint 3 We know the measure of ~~2~~ two angles and the length of ~~1~~ one side not between the angles, so we can draw only ~~1~~ one triangle.

Hint 4 The triangle is unique.



Tags: Constructing triangles, CC.7.G.A.2
Version: ~~9534e031.. 2013-10-17~~ c15babbe.. 2013-10-21

24 xc256611ab7d92e83

Draw a triangle with side length 5 between two 58° angles.
~~**Given these criteria is the triangle unique~~ **Is there a unique triangle that satisfies the given conditions?** [[? interactive-graph 1]]

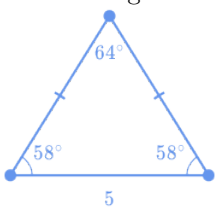
Ans Yes
No

Hint 1 Lets start by drawing the length of ~~1~~ one side, which we know is 5.

Hint 2 From the side 5, lets draw ~~2~~ two 58° angles. Since we have ~~2~~ two equal angles, we have an isosceles triangle. An isosceles triangle has at least ~~2~~ two sides equal in length.
Since we have ~~2~~ two 58° angles, the third angle must be 64°. The sum of ~~3~~ three angles in a triangle will always be 180°.

Hint 3 We know the measure of ~~2~~ two angles and the length of the side between the angles, so we can draw only ~~1~~ one triangle.

Hint 4 The triangle is unique.



Tags: Constructing triangles, CC.7.G.A.2
Version: ~~5ba2ed08.. 2013-10-17~~ 7d6f4977.. 2013-10-21

25 xc40b1278855716df

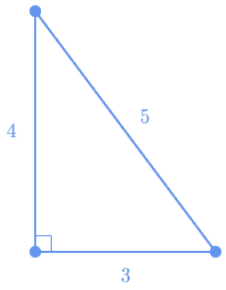
Draw a right triangle with side lengths 3, 4 and 5.
~~**Given these criteria is the triangle unique~~ **Is there a unique triangle that satisfies the given conditions?** [[? interactive-graph 1]]

Ans Yes
No

Hint 1 Lets start by drawing. We know the lengths of all ~~3~~ three sides. How many triangles can we draw?

Hint 2 The triangle with side lengths 3, 4 and 5 is a right triangle. Since we are given the measures of ~~3~~ three sides, we can draw only ~~1~~ one triangle.

Hint 3 The triangle is unique.



Tags: Constructing triangles, CC.7.G.A.2
Version: ~~b5262e6e.. 2013-10-17~~ 3adc68e6.. 2013-10-21

26

~~**Draw an obtuse triangle with angles 45°, 35° and 100°.** **Given these criteria is the triangle unique?** ? interactive-graph 1~~

~~**Ans** Yes No~~

~~**Hint 1** Lets start by drawing. While keeping one angle constant, we can change the side lengths to create one of the other two angles. For example, while keeping a 45° angle, we can change the side lengths to create the 35° angle. The third angle will have measure 100°.~~

Hint 2 We know the measure of 3 angles but not the length of any side. We can therefore draw many triangles of the same shape but with different sizes.

Hint 3 The triangle is not unique. **Tags:** Constructing triangles, CC.7.G.A.2**Version:** 71b1c27f.. 2013-10-20

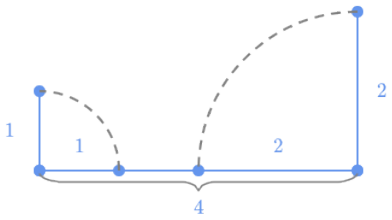
26 xdba9a2b900c8bbcd

How many triangles can be drawn with side lengths 1, 2 and 34?

Ans None
Only one
More than one

Hint 1 A triangle is a plane figure with 3 three straight sides and 3 three angles. Can we satisfy the definition given the conditions? Let's try to draw a triangle given the conditions.

Hint 2 In general, the longest any side of a triangle must be is always shorter than the sum of the two other other two sides. Because 1 + 2 = 34 > 2 + 1, the two sides 1 and 2 and 1 cannot meet to form a third angle . over the third side 4.



We cannot create 3 three angles to satisfy the definition of a triangle.

Hint 3 Given the conditions, no triangles can be drawn.

Tags: Constructing triangles, CC.7.G.A.2
Version: 2feadc91.. 2013-10-18 950a8286.. 2013-10-21

27 xe06107bc78ca0b3c

How many triangles can we draw with angles 30°, 50° and 100°?

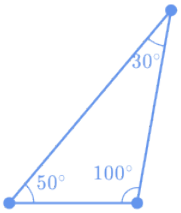
Ans None
Only one
More than one

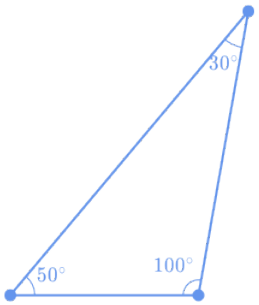
Hint 1 A triangle is a plane figure with 3 three straight sides and 3 three angles. The 3 three angles measures must add up to 180°. Let's add together the angles 30°, 50° and 100°:

$$\begin{aligned}\text{total angle measure} &= 30° + 50° + 180° \\ &= 180°\end{aligned}$$

So, at least 1 one triangle exists. Let's drawit.

Hint 2 We know the measure of 3 three angles but not the length of any side. We can draw many triangles with the same shape but different sizes.





Hint 3 When only the measures of all 3 three angles are known, more than one triangle can be drawn.

Tags: Constructing triangles, CC.7.G.A.2
Version: 089fe1ab.. 2013-10-20 7c205db7.. 2013-10-21

28 xe937d430ba8d75d8

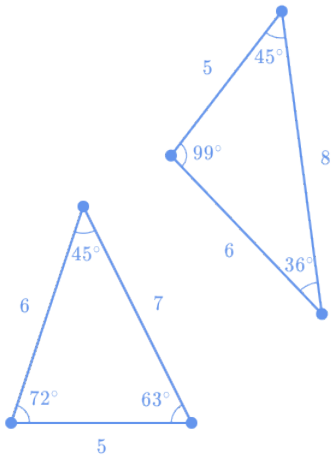
How many triangles can we draw that have one angle measure equal to 45° and one side of length 5?

Ans None
Only one
More than one

Hint 1 A triangle is a plane figure with 3 three straight sides and 3 three angles.

The 3 three angles measures always add up to 180°. We only know 1 one angle is 45°. We can't find the measures of the other 2 two angles.

Hint 2 We know the length of only ~~1~~ one side is 5. Depending if we place the side of length 5 next to or across from the 45° angle, we can draw many triangles with different shapes and different sizes.



Hint 3 If we only know ~~1 angle and 1~~ one angle and one side length, more than one triangle can be drawn.

Tags: Constructing triangles, CC.7.G.A.2
Version: ~~ba0688a0.. 2013-10-20~~ e1956610.. 2013-10-21

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29 xf51994a651ca1d7f

Draw a triangle with angles 30°, 50° and 100°.

~~**Given these criteria is the triangle unique~~ **Is there a unique triangle that satisfies the given conditions?** [[? interactive-graph 1]]

Ans Yes

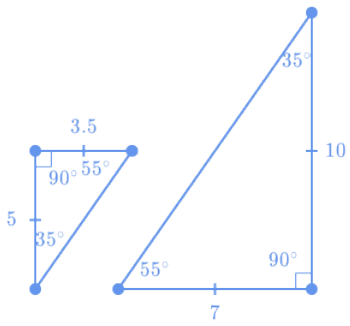
No

Hint 1 Lets start by drawing. While keeping ~~1~~ one angle, we can change the side lengths to create ~~1~~ one of the other ~~2~~ two angles.

While keeping a 100° angle, we can change the side lengths to create the 50° angle. The final angle will be 30°.

Hint 2 We know the measure of ~~3~~ three angles but not the length of any side. We can draw many triangles of same shape but different sizes.

Hint 3 The triangle is not unique.



Tags: Constructing triangles, CC.7.G.A.2
Version: ~~ac2e7f53.. 2013-10-18~~ d7e4aa43.. 2013-10-21

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30 xf9872931929ac56c

Draw a right triangle with side lengths 5, 12 and 13.

~~**Given these criteria is the triangle unique~~ **Is there a unique triangle that satisfies the given conditions?** [[? interactive-graph 1]]

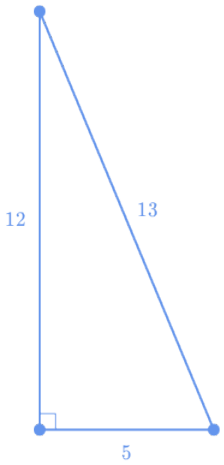
Ans Yes

No

Hint 1 Lets start by drawing. We know the lengths of all ~~3~~ three sides. How many right triangles can we draw?

Hint 2 Since we are given the lengths of all ~~3~~ three sides, we can draw only one ~~triangle.~~

~~Note the triangle~~ right triangle with side lengths 5, 12 and 13~~is a right triangle~~.



Hint 3 The triangle is unique.

Tags: Constructing triangles, CC.7.G.A.2
Version: ~~81990b3f.. 2013-10-20~~ ba30b682.. 2013-10-21
