# Constructing triangles

October 20, 2013

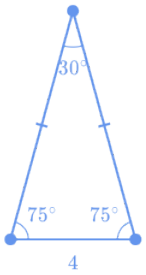
## 1 x0a2c8d4a7e3a85b9

**How many triangles can be drawn where the side length is known between two known 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 angles. Let's look at when a side of length ~~5~~ 4 is between a pair of 75° angles.

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




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

**Hint 3** ~~If~~ 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:** ~~549fc212.. 2013-10-18~~ e08d4e9d.. 2013-10-20

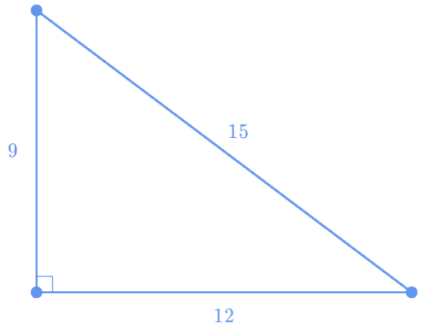
## 2 x18341f6f8d24d96e

**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 straight sides and 3 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 side of a triangle must be 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. ~~We can create 3 angles with the 3~~ Thus, we can create a triangle whose sides satisfy the ~~definition of a triangle~~given conditions.




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

**Tags:** Constructing triangles, CC.7.G.A.2
**Version:** ~~4e858421.. 2013-10-18~~ d17e39e1.. 2013-10-20

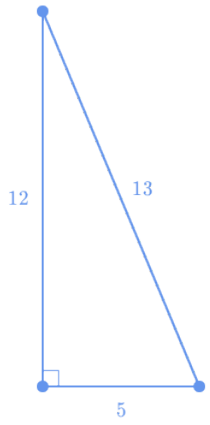
## 3 x1afa3df30210708e

**Draw a triangle with side lengths $5a$, $12a$ and $13a$~~where $a > 0$~~, where $a$ is any positive number.**
**Given these criteria, is the triangle unique?** [[? interactive-graph 1]]

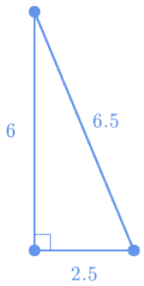
**Ans** Yes
No

**Hint 1** Lets start by choosing a value for $a$ where $a > 0$, then we can draw a triangle with side lengths $5a$, $12a$ and $13a$.

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

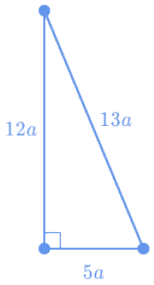



**Hint 3** ~~If $a = 0.5$, then~~ Choosing $a = 0.5$, we can draw a right triangle with side lengths 2.5, 6 and 6.5.




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

~~**Hint 4** The triangle is not unique.~~




**Tags:** Constructing triangles, CC.7.G.A.2
**Version:** ~~5e8d2d2a.. 2013-10-18~~ e7274d62.. 2013-10-20

## 4 x1c875467bbf94500

**Draw a triangle with side length 4 between two 70° angles.**

**Given these criteria is the triangle unique?** [[? interactive-graph 1]]

**Ans** Yes
No

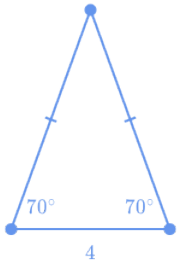
**Hint 1** Lets start by drawing the ~~length of 1 side , which we know is 4~~side whose length is 4.

**Hint 2** From the side 4, lets draw 2 70° angles. Since we have 2 equal angles, we have an isosceles triangle. An isosceles triangle has at least 2 sides equal in length.

Since we have 2 70° angles, the third angle must be 40°. The sum of 3 angles in a triangle will always be 180°.

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

**Hint 4** The triangle is unique.




**Tags:** Constructing triangles, CC.7.G.A.2
**Version:** ~~7ec6851f.. 2013-10-17~~ dd847b40.. 2013-10-20

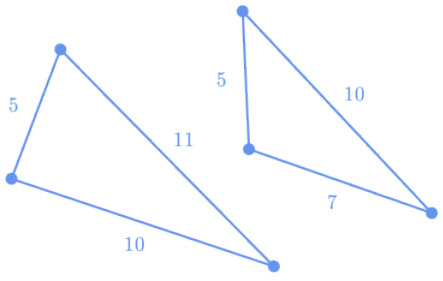
## 5 x1da87b180aca0e3d

**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 ~~measure of at least 1 angle or~~ length of the third side ~~. We~~ so we are free to choose any length. Thus, we cannot create a unique triangle with only ~~one shape and size~~two side lengths.

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



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

**Tags:** Constructing triangles, CC.7.G.A.2
**Version:** ~~f333944e.. 2013-10-18~~ cd0bdb35.. 2013-10-20

## 6 x25470998d7b41ee4

**How many triangles can be drawn ~~where side length 2 is not between~~ which have two 45° angles and two sides of length 2?**

**Ans** None
Only one
More than one

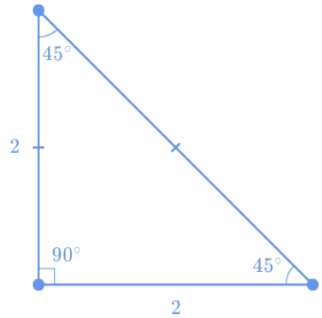
**Hint 1** A triangle is a plane figure with 3 straight sides and 3 angles. The 3 angles always add up to 180°.
We have ~~2~~ two 45° angles. The third angle $x$ is 90°:

$$\begin{aligned} 180° &= 2 \cdot 45° + x \\ 180° &= 90° + x \\ x &= 180° - 90° \\ x &= 90° \end{aligned}$$

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

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

**Hint 2** We can draw a ~~triangle given the side length 2 is not between the 2~~ 45° ~~angles. The side length 2 is~~ right triangle and make two of its sides of length 2. The sides with length 2 are in between the 45° and 90° angles.




This triangle is unique, meaning no other triangle exists with ~~exact same shape or~~ 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:** ~~dc27e435.. 2013-10-18~~ 5c0563e0.. 2013-10-20

## 7 x2bce84b97313fd2b

**Draw a triangle where the side length 3 is not between two angles 31° and 90°.**
**Given these criteria is the triangle unique?** [[? interactive-graph 1]]

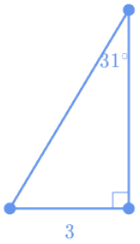
**Ans** Yes
No

**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 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 angles and the length of 1 side not between the angles, so we can draw only 1 triangle.

**Hint 4** The triangle is unique.




**Tags:** Constructing triangles, CC.7.G.A.2
**Version:** 1215aaf1.. 2013-10-17

## 8 x31c216ff88dad8e7

**How many triangles can ~~be drawn~~ 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 straight sides and 3 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 side of a triangle must be shorter than the sum of the two other sides. Because $4 + 4 = 8$, the two sides 4 and 4 meet to form 2 angles with the side of length 7. We can create 3 angles with the 3 sides satisfy the definition of a triangle.


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

**Tags:** Constructing triangles, CC.7.G.A.2
**Version:** ~~13a63a31. . 2013-10-18~~ 33683619.. 2013-10-20

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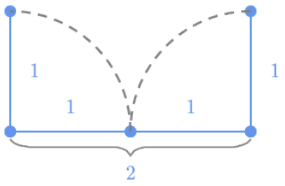
## 9 x38cc51ab93842600

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

**Ans**
[ None ]
Only one
More than one

**Hint 1** A triangle is a plane figure with 3 straight sides and 3 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 side of a triangle must be shorter than the sum of the two other sides. Because $1 + 1 = 2$, the two side lengths 1 and 1 cannot meet to form a third angle. We cannot create 3 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:** aeb719e4.. 2013-10-18

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## 10 x4c335bfbee0cba92

**Draw a right triangle with at least 2 ~~side lengths equal~~ sides of equal length.**

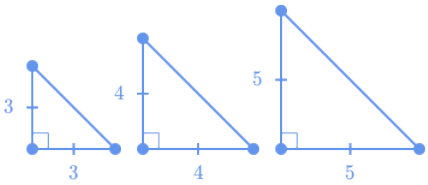
**Given these criteria is the triangle unique?** [[? interactive-graph 1]]

**Ans**
Yes
[ No ]

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

A triangle with at least 2 ~~side lengths equal is isosceles~~equal side lengths is called an isosceles triangle. We do not know the side lengths.

**Hint 2** ~~Since we are given the measures of 3 angles and do not know any side lengths, we~~ We can draw many ~~triangles with at least~~ right triangles with 2 ~~side lengths equal~~ sides of equal length.




**Hint 3** The triangle is not unique.

**Tags:** Constructing triangles, CC.7.G.A.2
**Version:** ~~0abcb8e1.. 2013-10-18~~ 5f71c91d.. 2013-10-20

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## 11 x531e157ba7c498eb

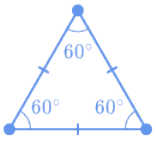
**How many triangles can be drawn where the measures of all 3 angles are ~~known~~the same?**

**Ans**
None
Only one
[ More than one ]

**Hint 1** A triangle is a plane figure with 3 straight sides and 3 angles. ~~Can we satisfy the definition given the conditions?~~ What triangle or triangles would satisfy the conditions?

Let's try to draw a triangle where ~~we known~~ the measures of all 3 angles ~~. For example, let's look at when~~ is the same.

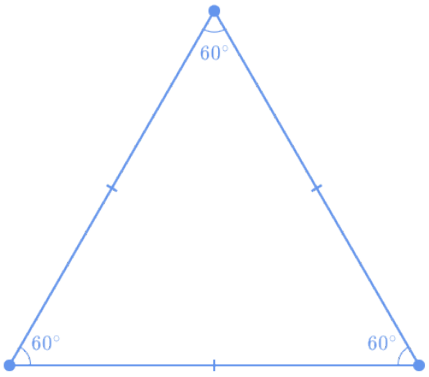
**Hint 2** The 3 angle measures in a triangle must sum to 180°. Because we know the measure of all 3 angles must be the same, we know all 3 angles ~~are 60°~~have measure $\frac{180°}{3} = 60°$.




This is an equilateral triangle.

**Hint ~~2~~3** Is this triangle unique ~~, meaning do no other~~ or do other equilateral triangles exist with ~~exact same shape or~~ a different size?

~~Hint 3~~ We can draw many equilateral triangles with the same shape but different sizes.




**Hint 4** ~~If the measures of all 3 angles are known, more~~ More than one triangle can be drawn with all 3 angles measures equal.

**Tags:** Constructing triangles, CC.7.G.A.2
**Version:** ~~30ec1d68.. 2013-10-18~~ 47228a28.. 2013-10-20

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## 12 x572fecbc70b353aa

**Draw ~~an isosceles right triangle with two side lengths~~ a right triangle that is also an isosceles triangle and has two sides of length 3.**
**Given these criteria is the triangle unique?** [[? interactive-graph 1]]

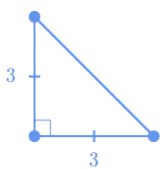
**Ans** Yes
No

**Hint 1** Lets start by drawing. A right triangle has one ~~90°~~90° angle.
An isosceles triangle has at least 2 side lengths equal. We are given 2 side lengths both equal to 3.

**Hint 2** Let's draw 1 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°~~90° angle.

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

**Hint 4** The triangle is unique.




**Tags:** Constructing triangles, CC.7.G.A.2
**Version:** ~~2e87ab50.. 2013-10-17~~ b8c14c25.. 2013-10-20

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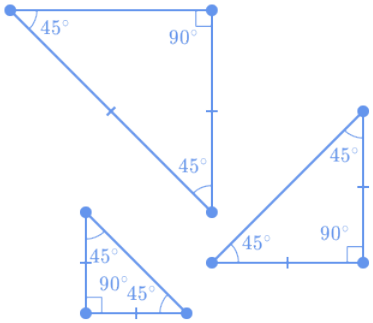
## 13 x651844ecfaac48e9

**Draw a right triangle with two 45° angles.**
**Given these criteria is the triangle unique?** [[? interactive-graph 1]]

**Ans** Yes
No

**Hint 1** Lets start by drawing. A right triangle has one ~~90°~~ 90° angle.
~~We have~~ The triangle we want is an isosceles right triangle. An isosceles right triangle has ~~at least 2 side lengths equal and 2~~ ~~45°~~ two 45° angles.

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




**Hint 3** The triangle is not unique.

**Tags:** Constructing triangles, CC.7.G.A.2
**Version:** ~~85d97ee1.. 2013-10-17~~ 525a66e3.. 2013-10-20

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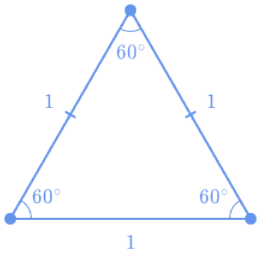
## 14 x6763ceb1ec0ceb41

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

**Ans** None
Only one
More than one

**Hint 1** A triangle is a plane figure with 3 straight sides and 3 angles. ~~Can we satisfy the definition given the~~ Is there a triangle or triangles that satisfy the conditions? Let's try to draw a triangle ~~where we known the lengths of all 3 sides.~~ with all side lengths equal to 1.

**Hint 2** ~~For example, let's look at when all side lengths are 1. We have~~ The result is an equilateral triangle with equal ~~sides~~ side lengths and equal angles measures:




This triangle is unique, meaning no other triangle exists ~~with exact same shape or size~~that has all sides equal to 1.

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

**Tags:** Constructing triangles, CC.7.G.A.2
**Version:** ~~def3450f.. 2013-10-18~~ ca634aaf.. 2013-10-20

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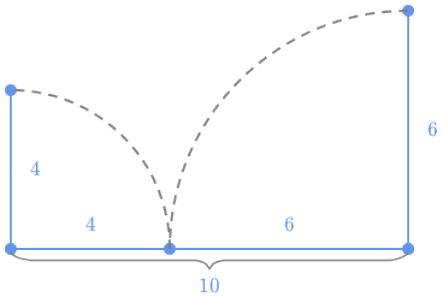
## 15 x67ee6010588311f2

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

**Ans** None
Only one
More than one

**Hint 1** A triangle is a plane figure with 3 straight sides and 3 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 side of a triangle must be shorter than the sum of the two other sides. Because $4 + 6 = 10$, the two sides 4 and 6 cannot meet to form a third angle. We cannot create 3 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

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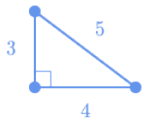
## 16 x67fd10caf4f54df2

**Draw a triangle with side lengths $3a$, $4a$ and $5a$~~where $a > 0$~~, where $a$ is any positive number.**
**Given these criteria is the triangle unique?** [[? interactive-graph 1]]

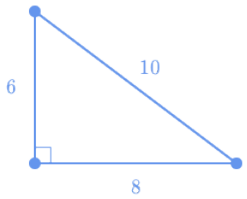
**Ans** Yes
No

**Hint 1** Lets start by choosing a value for $a$ where $a > 0$, then we can draw a triangle with side lengths $3a$, $4a$ and $5a$.

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

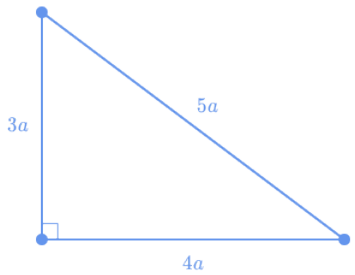



**Hint 3** If $a = 2$, then we can draw a right triangle with side lengths 6, 8 and 10.




We can let $a$ be any ~~nonzero~~ 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
**Version:** ~~196bcc1a.. 2013-10-18~~ 95e0a049.. 2013-10-20

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## 17 x6d7be6276bcb5815

**Draw a right triangle with a height ~~of~~ 4 and base ~~of~~ 5.**
**Given these criteria is the triangle unique?** [[? interactive-graph 1]]

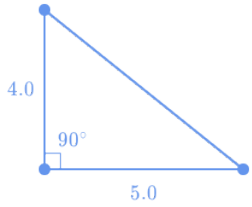
**Ans** Yes
No

**Hint 1** Lets start by drawing. A right triangle has a ~~90°~~90° angle.

The height of length 4 is drawn vertically (up and down) from the ~~90°~~90° angle. The base of length 5 is drawn horizontally (left and right) from the ~~90°~~90° angle.

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

**Hint 3** The triangle is unique.




**Tags:** Constructing triangles, CC.7.G.A.2
**Version:** ~~cf653e34.. 2013-10-17~~ 41522448.. 2013-10-20

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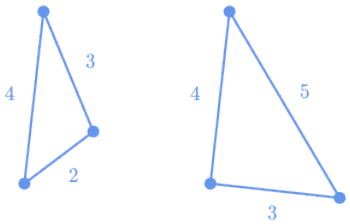
## 18 x72d893d1e3229dfd

**How many triangles can ~~be drawn side lengths of~~ 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 angle measure, we cannot create a unique triangle with ~~only one shape and size.~~

~~**Hint 2** We can draw many triangles with side lengths 3 and 4~~side lengths 3 and 4.

**Hint 3** If we only know ~~1 angle and 1 side length~~2 side lengths, more than one triangle can be drawn.

**Tags:** Constructing triangles, CC.7.G.A.2
**Version:** ~~58c104bc.. 2013-10-18~~ af92749c.. 2013-10-20

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## 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 straight sides and 3 angles. ~~The 3 angles always add up to~~ In a triangle, the sum of the three angle measures is 180°.

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

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

The sum of the 3 ~~angles sum up to a value~~ angle measures is greater than 180°.

**Hint 3** ~~Given the conditions, no triangles~~ No triangle can be drawn that satisfies the given conditions.

**Tags:** Constructing triangles, CC.7.G.A.2
**Version:** ~~bc3efef4.. 2013-10-18~~ 88ce2f2f.. 2013-10-20

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## 20 xb9aa47b3de982d55

**Draw an isosceles triangle with two 70° angles.**

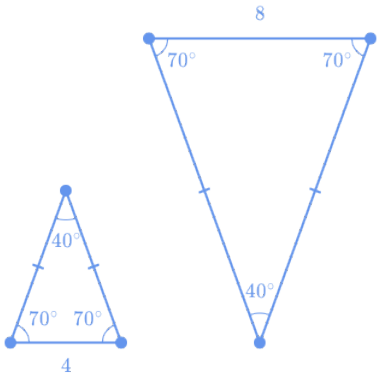
**Given these criteria is the triangle unique?** [[? interactive-graph 1]]

**Ans** Yes
No

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

## 21 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 straight sides and 3 angles. ~~The 3 angles always add up to~~ 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 ~~angles angles~~ angle measures 40°, 60° and 90°:

$$\begin{aligned} . &= 40° + 60° + 90° \\ &= 190° \\ &> 180° \end{aligned}$$

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

The sum of the 3 angles ~~sum up to a value~~ is greater than 180°.

**Hint 3** ~~Given the conditions, no triangles~~ No triangle can be drawn that satisfies the given conditions.

**Tags:** Constructing triangles, CC.7.G.A.2
**Version:** ~~aabc8e4a.. 2013-10-18~~ 69a54880.. 2013-10-20

## 22 xc001c788d01d9e5f

**Draw a triangle where side length 4 is not between two angles 58° and 90°.**
**Given these criteria is the triangle unique?** [[? interactive-graph 1]]

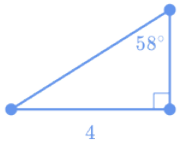
**Ans** Yes
No

**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 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 angles and the length of 1 side not between the angles, so we can draw only 1 triangle.

**Hint 4** The triangle is unique.




**Tags:** Constructing triangles, CC.7.G.A.2
**Version:** 9534c031.. 2013-10-17

## 23 xc256611ab7d92e83

**Draw a triangle with side length 5 between two 58° angles.**
**Given these criteria is the triangle unique?** [[? interactive-graph 1]]

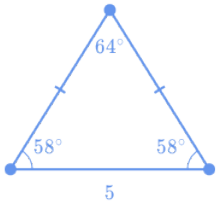
**Ans** Yes
No

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

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

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

**Hint 4** The triangle is unique.




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

## 24 xc40b1278855716df

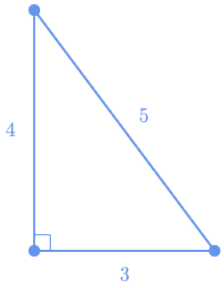
**Draw a triangle with side lengths 3, 4 and 5.**
**Given these criteria is the triangle unique?** [[? interactive-graph 1]]

**Ans** Yes
No

**Hint 1** Lets start by drawing. We know the lengths of all 3 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 sides, we can draw only 1 triangle.

**Hint 3** The triangle is unique.




**Tags:** Constructing triangles, CC.7.G.A.2
**Version:** b5262e6e.. 2013-10-17

## 25 xcfae18d2af4efa34

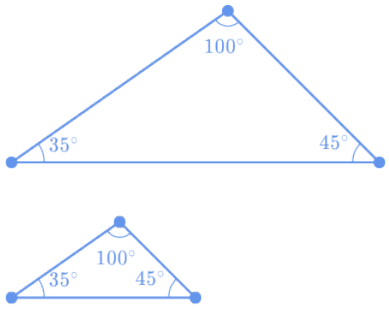
**Draw an obtuse triangle with angles 45°, 35° and 100°.**
**Given these criteria is the triangle unique?** [[? interactive-graph 1]]

**Ans** Yes
No

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

For example, while keeping a 45° angle, we can change the side lengths to create the 35° angle. The ~~final angle will be~~ 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:** ~~040283a2.. 2013-10-18~~ 71b1e27f.. 2013-10-20

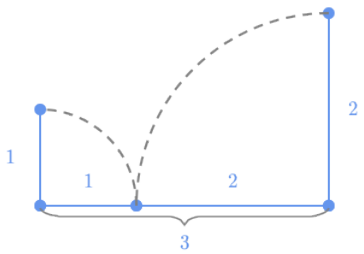
## 26 xdba9a2b900c8bbcd

**How many triangles can be drawn with side lengths 1, 2 and 3?**

**Ans** None
Only one
More than one

**Hint 1** A triangle is a plane figure with 3 straight sides and 3 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 side of a triangle must be shorter than the sum of the two other sides. Because $1+2=3$, the two sides 1 and 2 cannot meet to form a third angle. We cannot create 3 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

## 27 xe06107bc78ca0b3c

**How many triangles can ~~be drawn~~ 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 straight sides and 3 angles. The 3 angles ~~always~~ measures must add up to 180°. Let's add together the angles 30°, 50° and 100°:

$$= 30° + 50° + 180°$$

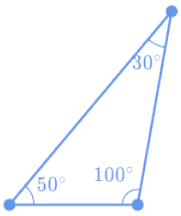
$$= 180°$$

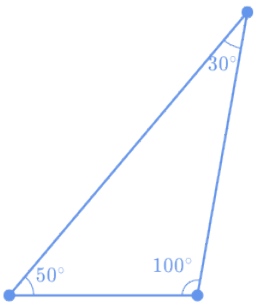
$$\text{total angle measure} = 30° + 50° + 180°$$

$$= 180°$$

So, at least 1 triangle exists. Let's ~~start by drawing~~draw it.

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




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

**Tags:** Constructing triangles, CC.7.G.A.2
**Version:** ~~99af1276.. 2013-10-18~~ 089fe1ab.. 2013-10-20

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## 28 xe937d430ba8d75d8

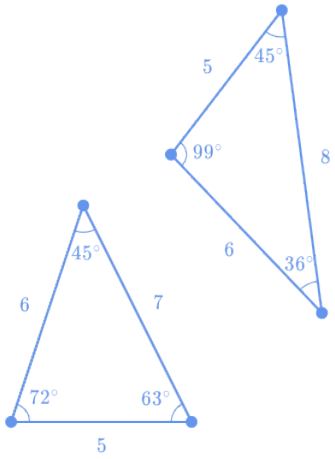
**How many triangles can ~~be drawn with one~~ we draw that have one angle measure equal to 45° and ~~a side length of~~ one side of length 5?**

**Ans** None
Only one
More than one

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

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

**Hint 2** We know the length of only 1 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 side length, more than one triangle can be drawn.

**Tags:** Constructing triangles, CC.7.G.A.2
**Version:** ~~82a35698.. 2013-10-18~~ ba0688a0.. 2013-10-20

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## 29 xf51994a651ca1d7f

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

**Given these criteria is the triangle unique?** [[? interactive-graph 1]]

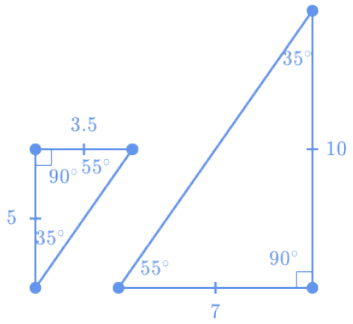
**Ans** Yes
No

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

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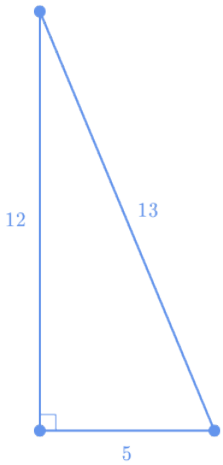
## 30 xf9872931929ac56c

**Draw a triangle with side lengths 5, 12 and 13.**
**Given these criteria is the triangle unique?** [[? interactive-graph 1]]

**Ans** Yes
No

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

**Hint 2** Since we are given the ~~measures of~~ lengths of all 3 sides, we can draw only ~~1 triangle. The~~ one triangle.




Note the 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:** ~~18374b72.. 2013-10-17~~ 81990b3f.. 2013-10-20

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