04. Basic Geometry

1. If , then area of triangle is

Answer:

* CD divides the equilateral triangles in triangles

1. Which of the following CAN be true? SELECT ALL THAT APPLY.

Answer:

* Since ,
* i) {ex: , }
* ii) {ex: , }
* iii) {ex: , }
* So, all options are possible
* Solution: **i), ii) & iii)**

1. If triangle is an isosceles right-angle triangle, what is the area of triangle ?

Answer:

* (because is an isosceles triangle)
* Area of

1. If the length of one of the sides of the triangle is , what is the perimeter of the given triangle?

Answer:

* Sum of measure of interior angle of triangle
* and the triangle is equilateral triangle
* Perimeter

1. Circle has radius unit. What is the difference between its circumference and area?

Answer:

* Area
* Circumference
* Difference

1. Measure of angle . Length of . What is the perimeter of sector ?

Answer:

* Therefore, linear angles are supplementary
* Length of arc (we have radius as and )
* Perimeter

1. If the length of arc , what is the area of the given circle?

Answer:

* Central angle is not specified so we cannot find the radius
* Solution: **It can’t be determined**

1. What is the relation between and ?

Answer:

* We have no information about . (It could be assigned any real value)
* Solution: **It can’t be determined**

1. can be expressed as

Answer:

* In the given figure so the is an isosceles
* and let them be x
* ;

1. What is the value of and ?

Answer:

* and
* Solution:

1. If , what is the difference between area of the sector and area of triangle ?

Answer:

* Radius and in
* By using theorem, side opposite to
* Area of
* As (linear angles)
* Area of sector
* Difference

1. The ratio between and () is

Answer:

* Δ on left is isosceles right angle Δ
* Δ on right is Δ

1. Which of the following MUST be true?

Answer:

* ; ->
* So, Option i) is correct
* Option iii) cannot be true because ∠B and ∠A has to bigger than ∠C and then the sum of interior angles of triangle will be greater than 180° which cannot be.
* Option ii) cannot be true, same reason mentioned above.
* Option iv) cannot be true, check 1st statement ->
* Solution: **i) & ii) only**

1. What is the ?

Answer:

* Area of DEBC = Area of DEO + Area of EBCO
* Area of ABCD
* Solution:

1. In a square (not shown), point is the mid-point of side and the area of triangle is . What is the area of square ?

Answer:

* Area of Δ XYV
* Solution: **16/5**

1. Which of the following could be the lengths of the sides of a triangle?

Answer:

* Use the concept: Sum of the smaller sides > bigger side
* Solution: **(7,8,13)**

1. and are all distinct point that lie in the same plane. If seg is parallel to seg and seg is parallel to seg , which of the following is a set of points all of which could lie on the same line?

Answer:

* So, no points from and can lie on the same line
* So, only {C, D, E} can lie on the same line
* Solution: **c) {C, D, E}**

1. If the length of a rectangle is one-third the perimeter of the rectangle, then the width of the rectangle is what fraction of the perimeter?

Answer:

1. When the base and height of an isosceles right triangle are each decreased by , the area is decreased by , what is the height of original triangle?

Answer:

* Area
* New Area
* 2 equation 2 variable

1. The given figure represents part of regular polygon with n sides, inscribed in a circle with centre . In terms of , what is the measure of ?

Answer:

* In , (radius)
* (isosceles Δ)
* (central angle of regular polygon)