

What's Going On?

Checking In

Minds on

Aquayo

Action!

Midpoints and Medians in Triangles

Consolidation

Exit Question

Learning Goal - I will explore the properties of Midpoints and Medians in triangles.

$$S = 180(n - 2)$$

↓
Sum of
Interior
Angles

↓
number
of sides

$$S = 180(n - 2)$$

$$\frac{1800}{180} = \frac{180(n-2)}{180}$$

$$10 = n - 2$$
$$+2 \quad +2$$

$$n = 12$$

$$S = 180(12 - 2)$$

$$S = 180(10)$$

$$S = 1800 \checkmark$$

If a polygon has 17 sides, what is the sum of the interior angles?

$$S = 180(n - 2)$$

If a polygon has 2 sides, what is the sum of the interior angles?

0

If a polygon has 37 sides, what is the sum of the interior angles?

6300°

If the sum of the interior angles of a polygon is 3960, how many sides does it have?

$$\frac{3960}{180} + 2 = 24$$

If the sum of the interior angles of a polygon is 180°, how many sides does it have?

3

If a polygon has 16 sides, what is the sum of the exterior angles?

Minds on

Aquayo Today!

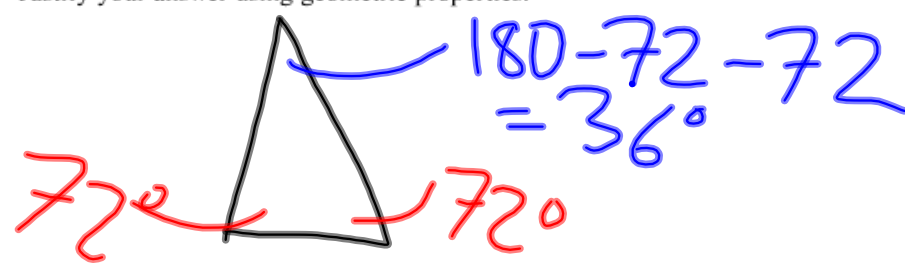
21 Twinkle Twinkle

Nicole notices the star design shown below on the pavement outside a movie theatre.

$S = 180(5-2)$
 $S = 180(3)$
 $S = 540$
 $\frac{540}{5} = 108^\circ$

$\angle = 108^\circ$
 $\angle = 180 - 108 = 72^\circ$

Determine the sum of the angle measures in the corners of this star: $a + b + c + d + e$.
 Justify your answer using geometric properties.



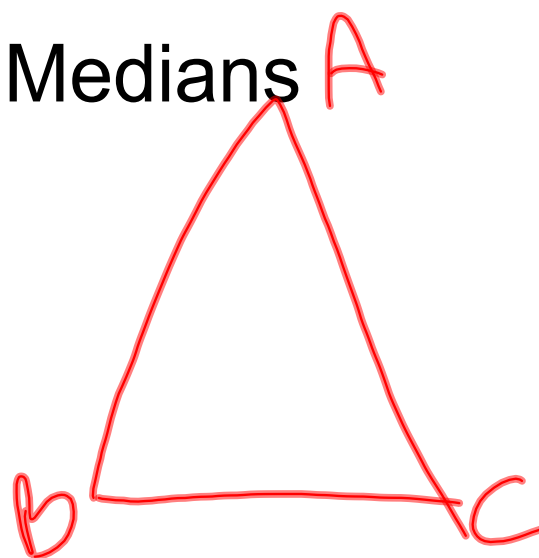
$36 \times 5 = 180^\circ$

Action!

Midpoints and Medians **A**

Draw a triangle.

Label it **ABC**



Action!

Midpoints and Medians

1. Measure the length of side AB
Find the midpoint and label it D.

$$AB = \underline{\quad}$$

2. Measure the length of side AC
Find the midpoint and label it E.

$$AC = \underline{\quad}$$

3. Draw a line segment from D to E.

4. What do you notice about BC and DE?

- parallel
- DE is half the length of BC

Action!

Midpoints and Medians

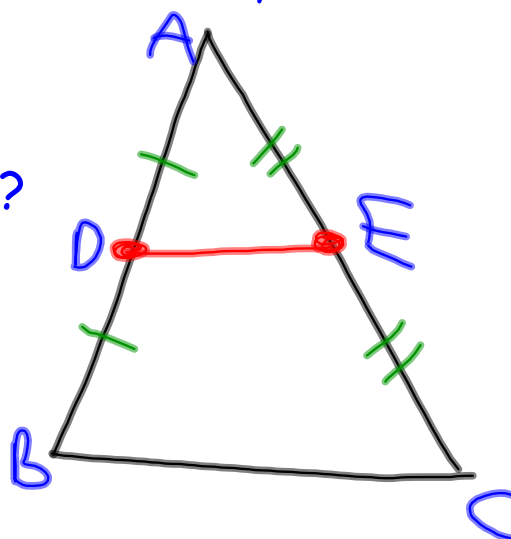
A line segment joining the midpoints of two sides of a triangle is parallel to the third side and half the length.

Action!

Midpoints and Medians

Measure the heights of $\triangle ABC$, $\triangle ADE$ and quadrilateral $BCED$.

What do you notice?



Action!

Midpoints and Medians

The height of a triangle formed by joining the

midpoints of two sides is half the height
of the original triangle.

Action!

Midpoints and Medians

1. Using your triangle again find the midpoint of side BC , label it M , and draw a line segment connecting A to M .

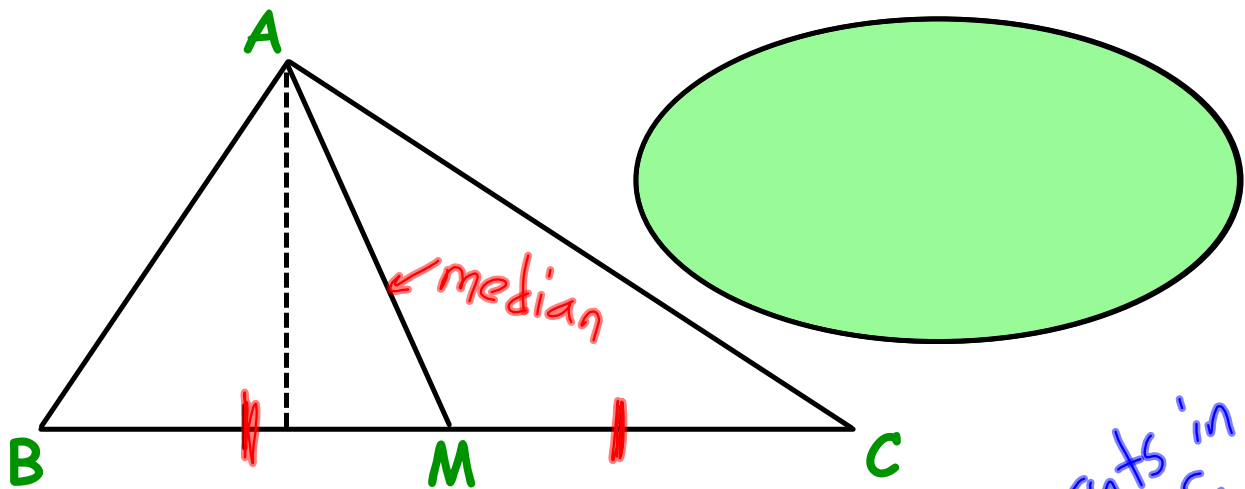
THIS LINE IS CALLED THE MEDIAN FROM A TO BC

2. What do you notice about the heights of triangle ABM and triangle ACM ? **THEY ARE THE SAME**

3. What do you notice about the bases of triangle of ABM and triangle ACM ? **THEY ARE THE SAME**

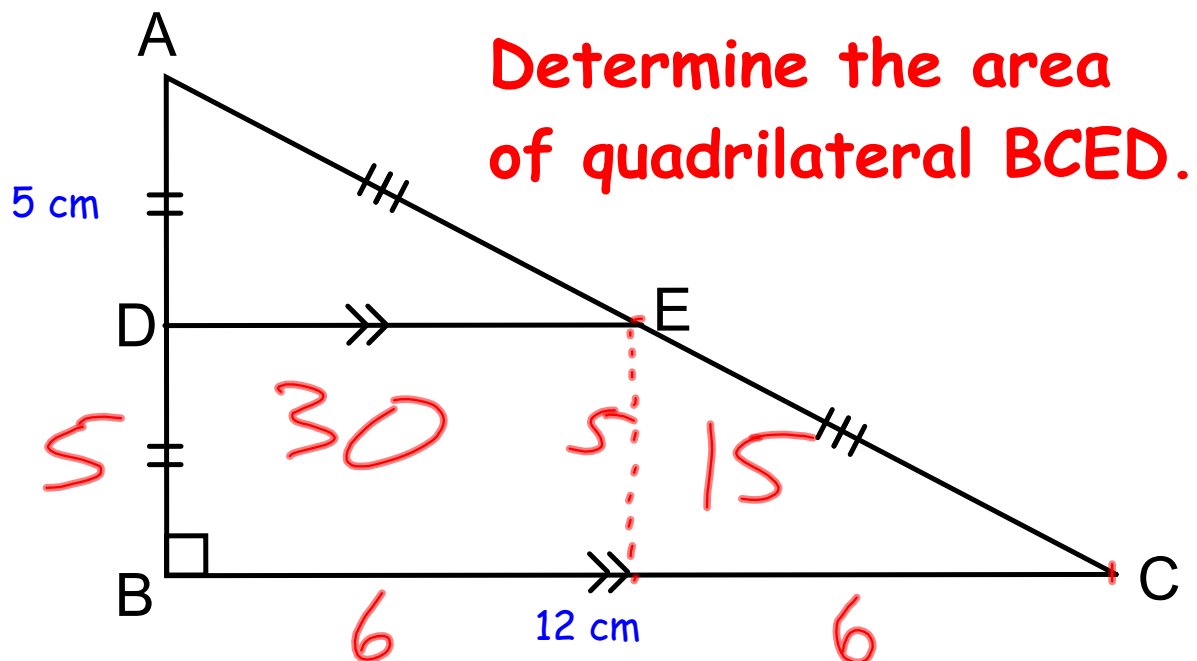
Action!

Midpoints and Medians



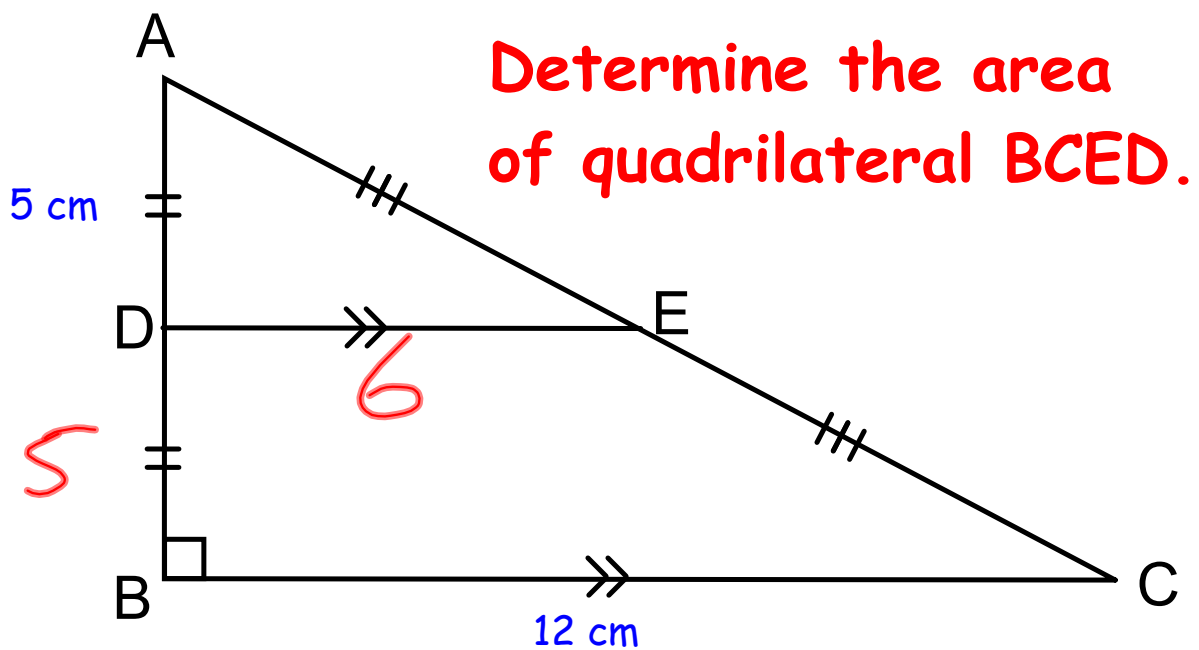
The median of a triangle bisects

its area.

Consolidation**Exit Question**

Consolidation

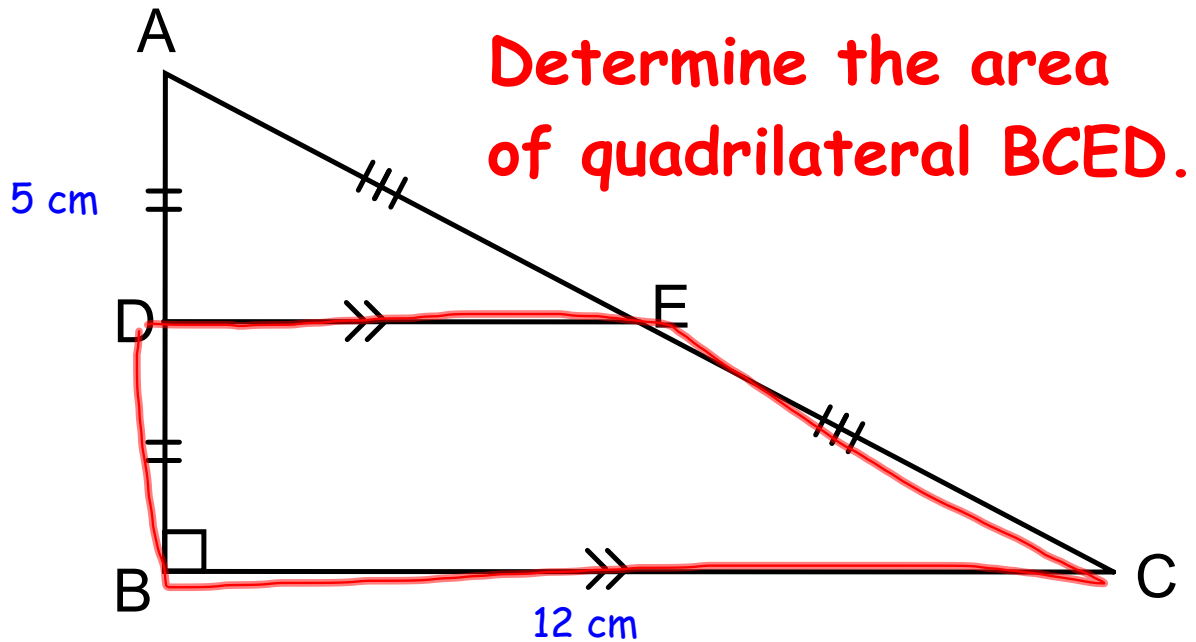
Exit Question



$$\begin{aligned}
 &ABC - ADE \\
 &= 60 - 15 \\
 &= 45
 \end{aligned}$$

Consolidation

Exit Question

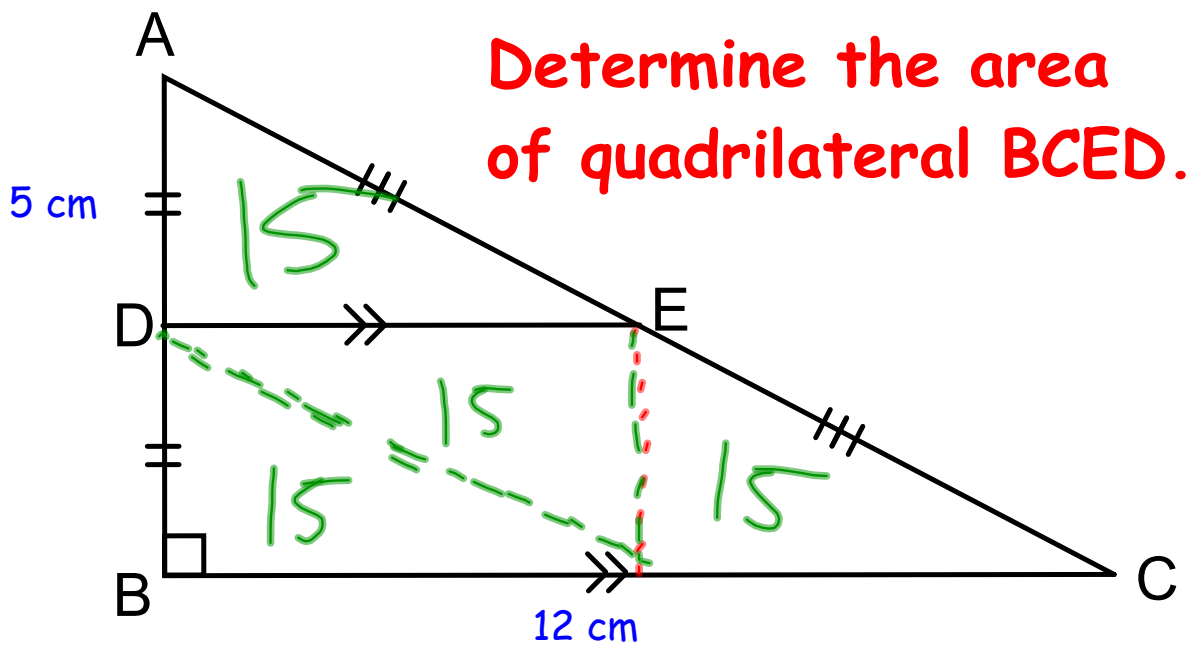


$$\frac{(a+b)h}{2}$$

$$\frac{(6+12)5}{2}$$

Consolidation

Exit Question



Consolidation

Homework

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Test next Wednesday