I can recognize and apply properties of rectangles and determine if a quadrilateral is a rectangle.

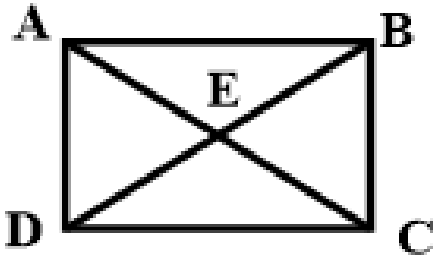
# Section 6-4 Rectangles

**Rectangle**

A parallelogram with four right angles

**Properties of Rectangles**

- All properties of parallelogram plus all the angles are right angles
  (opp. sides parallel and congruent, diagonals bisect each other)
- Diagonals of a rectangle will be _____




**AC = DB**
**AE = EC = EB = ED**

**Theorem**

If the diagonals of a parallelogram are congruent, then the figure is a _____

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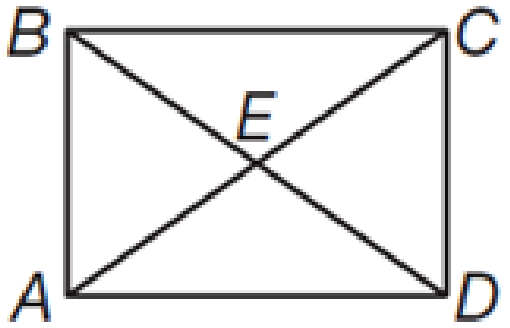
**Quadrilateral *ABCD* is a rectangle.**

If $AE = 36$ and $CE = 2x - 4$, find $x$.



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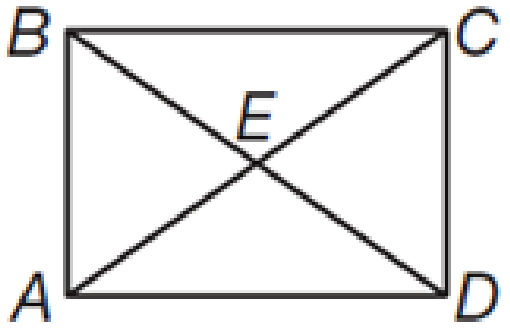
**Quadrilateral *ABCD* is a rectangle.**




If $BE = 6y + 2$ and $CE = 4y + 6$, find $y$.

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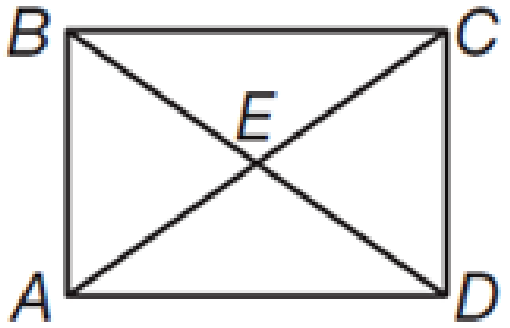
**Quadrilateral *ABCD* is a rectangle.**




If $m\angle AED = 12x$ and $m\angle BEC = 10x + 20$, find $m\angle AED$.

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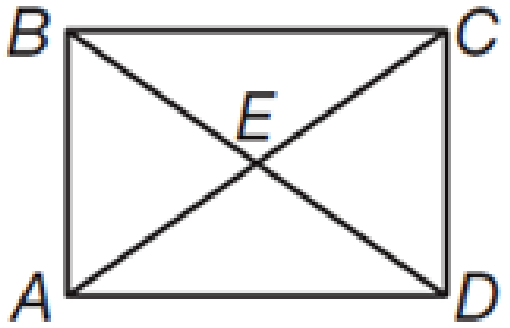
**Quadrilateral *ABCD* is a rectangle.**




**If <ABD = 3x + 4 and <CBD = 2x + 6, find x**

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**COORDINATE GEOMETRY** **Graph each quadrilateral with the given vertices. Determine whether the figure is a rectangle. Justify your answer using the indicated formula.**

$A(-3, 0)$, $B(-2, 3)$, $C(4, 5)$, $D(3, 2)$; Slope Formula

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**COORDINATE GEOMETRY** **Graph each quadrilateral with the given vertices. Determine whether the figure is a rectangle. Justify your answer using the indicated formula.**

$A(-3, 0), B(-2, 2), C(3, 0), D(2\ -2)$; Distance Formula