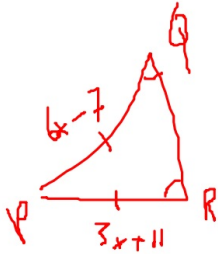


EXAMPLE 1

In $\triangle PQR$, $\angle Q \cong \angle R$. If $PQ = 6x - 7$ and $PR = 3x + 11$, find:

- a. the value of x b. PQ c. PR



$$6x - 7 = 3x + 11$$

$$+7 \quad +7$$

$$6x = 3x + 18$$

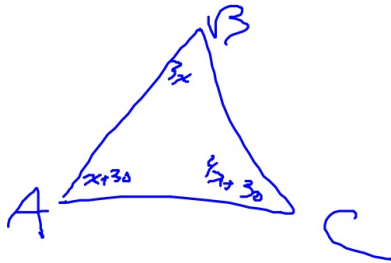
$$-3x \quad -3x$$

$$3x = 18$$

$$x = 6$$

EXAMPLE 2

The degree measures of the three angles of $\triangle ABC$ are represented by $m\angle A = x + 30$, $m\angle B = 3x$, and $m\angle C = 4x + 30$. Describe the triangle as acute, right, or obtuse, and as scalene, isosceles, or equilateral.



$$x + 30 + 3x + 4x + 30 = 180$$

$$8x + 60 = 180$$

$$8x = 120$$

$$x = 15$$



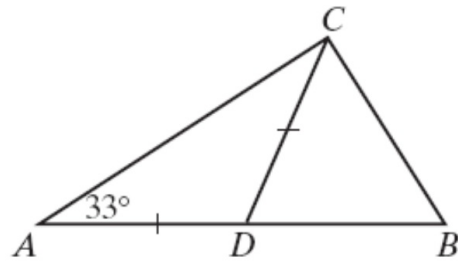
- 1.** A line segment joining a vertex of a triangle to the midpoint of the opposite side is called a(n)
- (1) altitude
 - (2) angle bisector
 - (3) median
 - (4) perpendicular bisector

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- 5.** The altitudes drawn from the vertices of a right triangle intersect
- (1) in the interior of the triangle.
 - (2) in the exterior of the triangle.
 - (3) at the midpoint of the base of the triangle.
 - (4) at one of the vertices of the triangle.

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4.



In $\triangle ABC$, \overline{CD} is the median to side \overline{AB} and $\overline{CD} \cong \overline{AD}$. If $m\angle A = 33$, what is $m\angle B$?

(1) 33

(3) 66

(2) 57

(4) 114