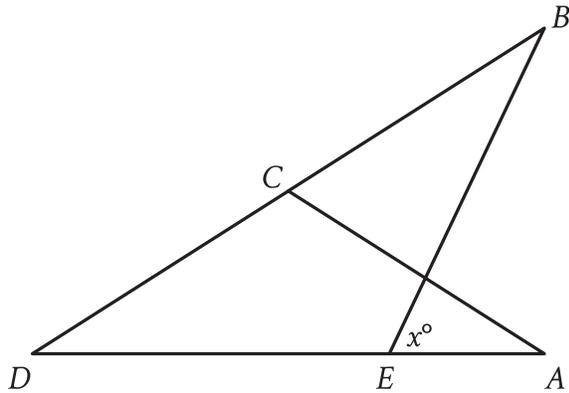


#1

ID: 6d99b141

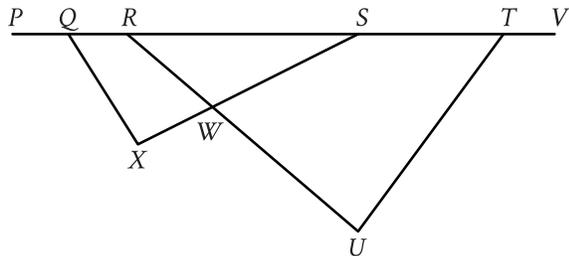


Note: Figure not drawn to scale.

In the figure, $AC = CD$. The measure of angle EBC is 45° , and the measure of angle ACD is 104° . What is the value of x ?

#2

ID: e10d8313



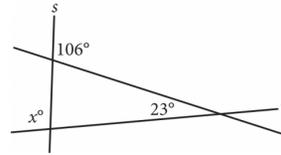
Note: Figure not drawn to scale.

In the figure shown, points $Q, R, S,$ and T lie on line segment PV , and line segment RU intersects line segment SX at point W . The measure of $\angle SQX$ is 48° , the measure of $\angle SXQ$ is 86° , the measure of $\angle SWU$ is 85° , and the measure of $\angle VTU$ is 162° . What is the measure, in degrees, of $\angle TUR$?

#3

ID: f88f27e5

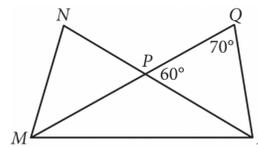
Intersecting lines $r, s,$ and t are shown below.



What is the value of x ?

#4

ID: 947a3cde



In the figure above, \overline{MQ} and \overline{NR} intersect at point P , $NP = QP$, and $MP = PR$. What is the measure, in degrees, of $\angle QMR$? (Disregard the degree symbol when gridding your answer.)

#5

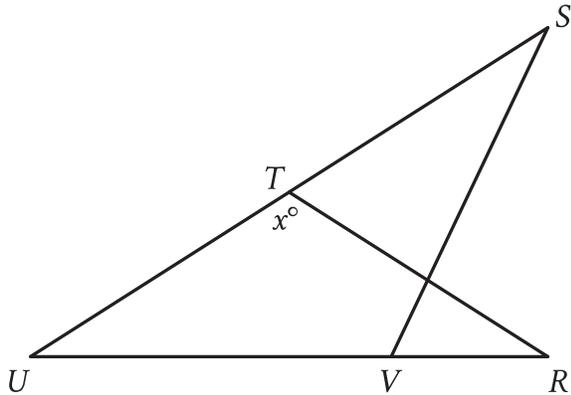
ID: a0369739

In triangle ABC , the measure of angle B is 90° and BD is an altitude of the triangle. The length of AB is 15 and the length of AC is 23 greater than the length of AB . What is the value of $\frac{BC}{BD}$?

- A) $\frac{15}{38}$
- B) $\frac{15}{23}$
- C) $\frac{23}{15}$
- D) $\frac{38}{15}$

#6

ID: 2d2cb85e

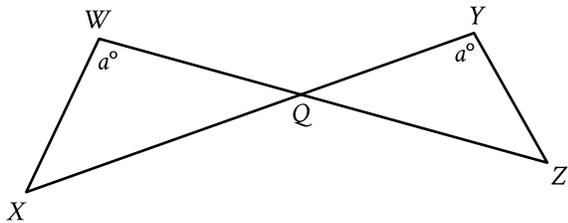


Note: Figure not drawn to scale.

In the figure, $RT = TU$, the measure of angle VST is 29° , and the measure of angle RVS is 41° . What is the value of x ?

#7

ID: 345cc36a



Note: Figure not drawn to scale.

In the figure shown, \overline{WZ} and \overline{XY} intersect at point Q . $YQ = 63$, $WQ = 70$, $WX = 60$, and $XQ = 120$. What is the length of \overline{YZ} ?

#8

ID: 901c3215

In triangles ABC and DEF , angles B and E each have measure 27° and angles C and F each have measure 41° . Which additional piece of information is sufficient to determine whether triangle ABC is congruent to triangle DEF ?

- A) The measure of angle A
- B) The length of side AB
- C) The lengths of sides BC and EF
- D) No additional information is necessary.

#9

ID: f7dbde16

In triangles LMN and RST , angles L and R each have measure 60° , $LN = 10$, and $RT = 30$. Which additional piece of information is sufficient to prove that triangle LMN is similar to triangle RST ?

- A) $MN = 7$ and $ST = 7$
- B) $MN = 7$ and $ST = 21$
- C) The measures of angles M and S are 70° and 60° , respectively.
- D) The measures of angles M and T are 70° and 50° , respectively.

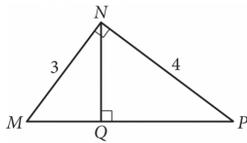
#10

ID: b1e1c2f5

In right triangle ABC , angle C is the right angle and $BC = 162$. Point D on side AB is connected by a line segment with point E on side AC such that line segment DE is parallel to side BC and $CE = 2AE$. What is the length of line segment DE ?

#11

ID: 740bf79f



In the figure above, what is the length of \overline{NQ} ?

- A) 2.2
- B) 2.3
- C) 2.4
- D) 2.5

#12

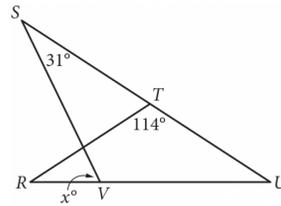
ID: 3b225698

Triangle XYZ is similar to triangle RST such that $X, Y,$ and Z correspond to $R, S,$ and $T,$ respectively. The measure of $\angle Z$ is 20° and $2XY = RS$. What is the measure of $\angle T$?

- A) 2°
- B) 10°
- C) 20°
- D) 40°

#13

ID: bd7f6e30

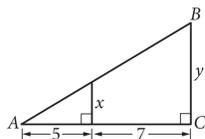


In the figure above, $RT = TU$. What is the value of x ?

- A) 72
- B) 66
- C) 64
- D) 58

#14

ID: eeb4143c



Note: Figure not drawn to scale.

The area of triangle ABC above is at least 48 but no more than 60. If y is an integer, what is one possible value of x ?

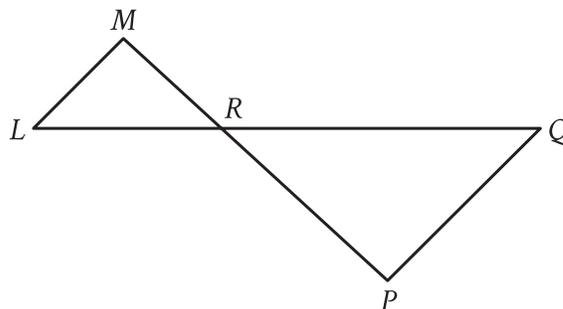
#15

ID: 5b4757df

In triangle RST , angle T is a right angle, point L lies on \overline{RS} , point K lies on \overline{ST} , and \overline{LK} is parallel to \overline{RT} . If the length of \overline{RT} is 72 units, the length of \overline{LK} is 24 units, and the area of triangle RST is 792 square units, what is the length of \overline{KT} , in units?

#16

ID: adae6543



Note: Figure not drawn to scale.

In the figure, \overline{LQ} intersects \overline{MP} at point R , and \overline{LM} is parallel to \overline{PQ} . The lengths of \overline{MR} , \overline{LR} , and \overline{RP} are 6, 7, and 11, respectively. What is the length of \overline{LQ} ?

- A) $\frac{119}{11}$
- B) $\frac{77}{6}$
- C) $\frac{113}{6}$
- D) $\frac{119}{6}$

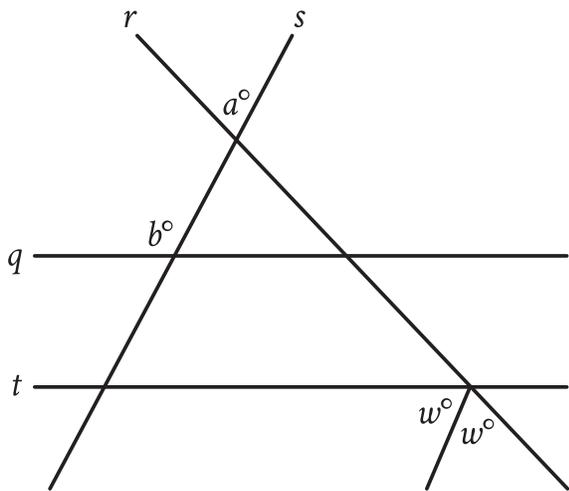
#17

ID: f731d88b

In convex pentagon $ABCDE$, segment AB is parallel to segment DE . The measure of angle B is 139 degrees, and the measure of angle D is 174 degrees. What is the measure, in degrees, of angle C ?

#18

ID: 17912810

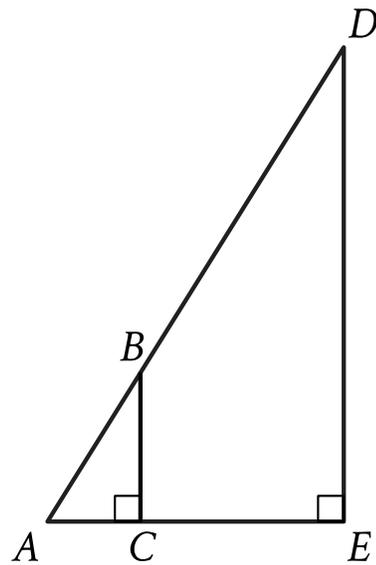


Note: Figure not drawn to scale.

In the figure, parallel lines q and t are intersected by lines r and s . If $a = 43$ and $b = 122$, what is the value of w ?

#19

ID: 694b7fce

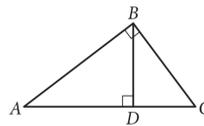


Note: Figure not drawn to scale.

In the figure shown, $AB = \sqrt{34}$ units, $AC = 3$ units, and $CE = 21$ units. What is the area, in square units, of triangle ADE ?

#20

ID: 6a3fbec3



Note: Figure not drawn to scale.

In the figure above, $BD = 6$ and $AD = 8$.
What is the length of \overline{DC} ?