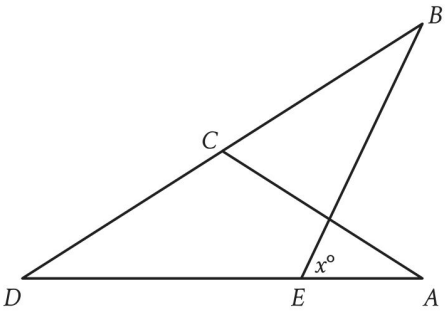
SAT Math

Lines, Angles, and Triangles 3

Question # **ID**

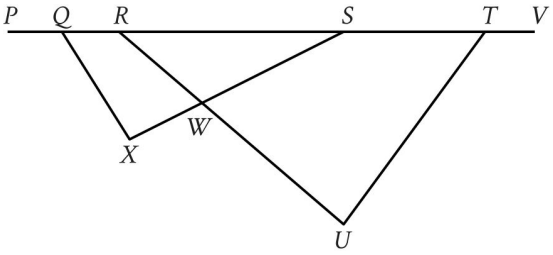
3.1 6d99b141



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?

3.2 e10d8313

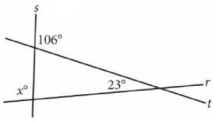


Note: Figure not drawn to scale.

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 $\angle TUR$?

3.3 f88f27e5

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



What is the value of x ?

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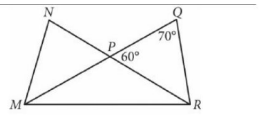
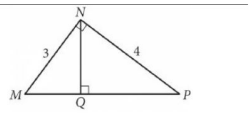
3.4 947a3cde



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.)

3.5 740bf79f



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

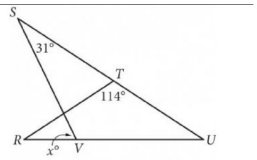
A. 2.2

B. 2.3

C. 2.4

D. 2.5

3.6 bd7f6e30



In the figure above, $RT = TU$.

What is the value of x ?

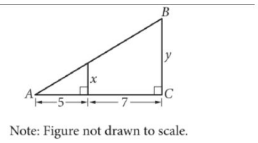
A. 72

B. 66

C. 64

D. 58

3.7 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 ?

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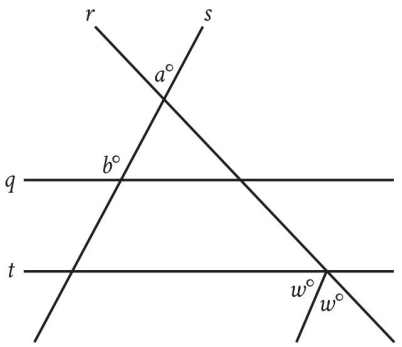
3.8 5b4757df

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?

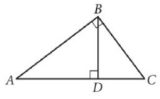
3.9 17912810



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?

3.10 6a3fbec3

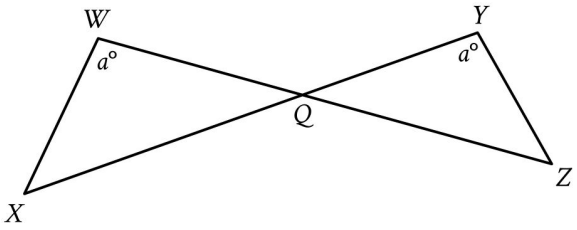


Note: Figure not drawn to scale.

In the figure above, $BD = 6$ and $AD = 8$.

What is the length of $\overline{DC}$?

3.11 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 $\overline{YZ}$?

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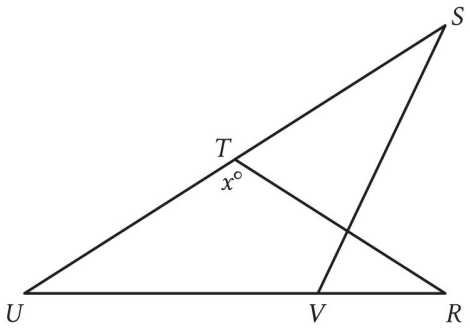
3.12 2d2cb85e



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?

3.13 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?

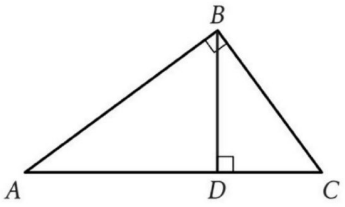
A. $MN = 7$ and $ST = 7$

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.

3.14 abcd0011



Note: Figure not drawn to scale.

In the figure shown, $AD = \frac{121}{3}$ and $AB = \frac{11\sqrt{130}}{3}$. What is the length of $\overline{DC}$?

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3.15 322a6dfe

Quadrilaterals $PQRS$ and $WXYZ$ are similar, where P, Q, and R correspond to W, X, and Y, respectively. The measure of $\angle S$ is 135°, $PS = 45$, and $WZ = 9$. What is the measure of $\angle Z$?

A. 5°

B. 27°

C. 45°

D. 135°

3.16 fecc446d

A line intersects two parallel lines, forming four acute angles and four obtuse angles. The measure of one of these eight angles is $(7x - 250)^\circ$. The sum of the measures of four of the eight angles is k°. Which of the following could NOT be equivalent to k, for all values of x?

A. $-14x + 1{,}540$

B. $14x - 320$

C. $-28x + 1{,}720$

D. 360