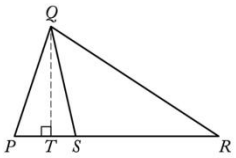
SSAT 数学硬骨头 VI



Triangle PQR shown contains triangles PQS and SQR. The area of triangle PQR is 60 square units, the area of triangle SQR is 42 square units, and the length of segment $\overline{QT}$ is 8 units. What is the length, in units, of segment $\overline{PS}$?

Question

Which of the following is the least common multiple (LCM) of **12, 18, and 45**?

Options:

A) 90
B) 180
C) 360
D) 540
E) 720

Revised Question

What are all the values of x that satisfy the equation:

$$2x^2 - 10x + 12 = 0?$$

Options:

A) $3, 2$
B) $4, 3$
C) $6, 2$
D) $4, 2$
E) $5, 1$

$2x^2 - 7x + 3 = 0?$ $6x^2 - 19x - 15 = 0?$

In the xy-coordinate plane, a line with a slope of 2 passes through the points $(k,\ 3)$ and $(6,\ k)$. What is the value of k ?

Question

For the sets below:

$$A = \{3, 6, 9, 12, 15, 18\}$$

$$B = \{-8, -4, 0, 4, 8, 12\}$$

Let a represent any member of set A, and b represent any member of set B. What is the maximum possible value of $|a - b|$?

Question

What is the solution to the equation:

$$\left(3^{x+1}\right)^2 = 81^{x-2}?$$

Question

A square has an area of x^2 square units and a perimeter of y units. If $x^2 = \frac{y^2}{16}$, what is the length of one side of the square, in units?

A) $\frac{y}{4}$
B) $\frac{y}{2}$
C) y
D) $2y$
E) $4y$