Quadratic function

12

Area of a rectangle in an equilateral triangle

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In an equilateral triangle with side $\overline{AB}$ = 12 cm in rectangle *KLMN*with side $\overline{KL}$= *x*cm.

Calculate the area of rectangle *KLMN* for *x* = 2 cm.

**1**

Determine the area *S*(*x*) of rectangle *KLMN* as a function of *x* = $\overline{KL}$.

**2**

Complete the following table:

**3**

|  |  |
| --- | --- |
| ***x*** | **Area of *KLMN*** |
| 1 |  |
| 2 |  |
| 3 |  |
| 4 |  |
| 5 |  |
| 6 |  |
| 7 |  |
| 8 |  |
| *x* | *S*(*x*) |

Represent function *S*(*x*) graphically and describe its properties.

**4**

For what value of *x* is the area of rectangle *KLMN* at its maximum? Calculate said maximum area.

**5**

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