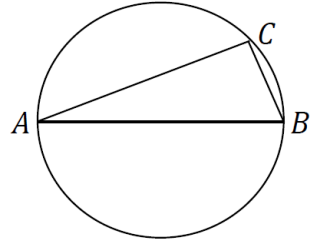


GEOMETRY

6. On the picture, the points A, B and C belong to a circle, so that AB is a diameter and $m(\angle BAC) = 20^\circ$. Determine the measure in degrees of the minor arc AC .

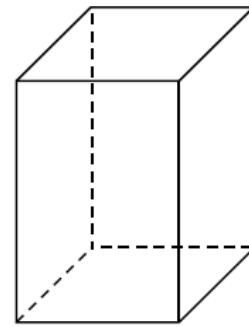


Solution:

- | | |
|---|---|
| L | L |
| 0 | 0 |
| 1 | 1 |
| 2 | 2 |
| 3 | 3 |
| 4 | 4 |
| 5 | 5 |

Answer: _____.

7. The volume of a regular quadrilateral prism is equal to 36 cm^3 . Determine the length of the diagonal of the lateral face, if it is known that the area of the base is equal to 9 cm^2 .

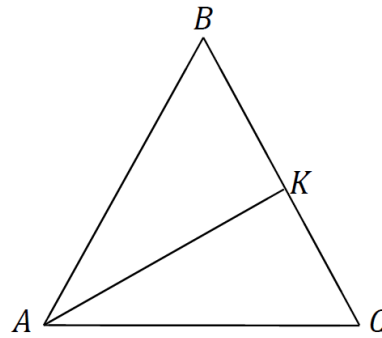


Solution:

- | | |
|---|---|
| L | L |
| 0 | 0 |
| 1 | 1 |
| 2 | 2 |
| 3 | 3 |
| 4 | 4 |
| 5 | 5 |

Answer: _____.

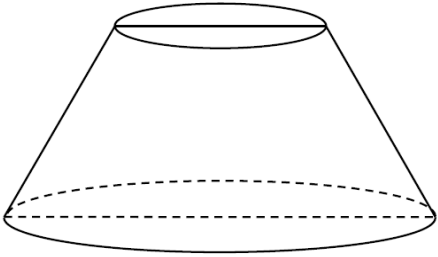
8. In the isosceles triangle ABC the altitude AK divides the side BC in the line segments $BK = 12 \text{ cm}$ and $KC = 8 \text{ cm}$. Determine the length of the altitude corresponding to the base AC .



Solution:

- | | |
|---|---|
| L | L |
| 0 | 0 |
| 1 | 1 |
| 2 | 2 |
| 3 | 3 |
| 4 | 4 |
| 5 | 5 |
| 6 | 6 |
| 7 | 7 |
| 8 | 8 |

Answer: _____.

9.	<p>In a frustum of a right circular cone, the radiuses of the bases are of $\sqrt{3}$ cm and $3\sqrt{3}$ cm, and the angle formed by the slant height and the large base is of 30°. Determine the area of the lateral surface of the frustum.</p> <p><i>Solution:</i></p>		L 0 1 2 3 4 5 6 7 8	L 0 1 2 3 4 5 6 7 8
FUNCTIONS				
10.	<p>Consider the function $f: \mathbb{R} \setminus \{\sqrt{3}\} \rightarrow \mathbb{R}$, $f(x) = \frac{3}{\sqrt{3}-x}$. Determine the abscissa of the point on the graph of the function f, which has the ordinate equal to $\sqrt{3}$.</p> <p><i>Solution:</i></p>	L 0 1 2 3 4 5	L 0 1 2 3 4 5	
<p><i>Answer:</i> _____.</p>				

11.	<p>Consider the function $f: \mathbb{R} \rightarrow \mathbb{R}$, $f(x) = -2x^2 + 5x + 12$. Show that the sum of the integer values of x, for which the corresponding values of the function f are nonnegative, is a perfect square.</p> <p><i>Solution:</i></p>	L 0 1 2 3 4 5 6 7 8	L 0 1 2 3 4 5 6 7 8
12.	<p>Determine the first term of a geometric progression with positive terms, if it is known that the product of the first term and the third term is equal to 4 and the fourth term of the progression is equal to 50.</p> <p><i>Solution:</i></p> <p><i>Answer:</i> _____.</p>	L 0 1 2 3 4 5 6 7 8	L 0 1 2 3 4 5 6 7 8

