

Subaquatic Cybernetics The Siren-Class Android Cipher

Calculate the numerical values of the biomechanical sea-creature components to bypass the security lockdown on the ocean-floor laboratory.

Name: _____ Date: _____

1 THE KEY

$$\begin{array}{l} \text{Crescent Moon} = \boxed{} \quad \text{Question Mark} = \boxed{} \quad \text{Lightning Bolt} = 25 \quad \text{Pentagon} = \boxed{} \quad \text{Square} = \boxed{} \\ \text{Star} = \boxed{} \end{array}$$

Every symbol is a whole number from 1 to 30. A number in front of a shape means multiply: 2 stars = 2 x star. A small 2 after a shape means square it: star² = star x star. sqrt(shape) is the square root of that shape's value.

2 FIND THE MISSING VALUES

Some shapes in the key are missing. Use these to work them out, in order, and write them into the key.

$$\begin{array}{l} \text{Pentagon} \times \text{Square} = 552 \\ \text{Pentagon} - \text{Square} = 1 \end{array}$$

$$2 \text{ Star} + \text{Lightning Bolt} = 67$$

$$2 \text{ Crescent Moon} + \text{Lightning Bolt} = 39$$

$$2 \text{ Circle} + \text{Star} = 41$$

3 CRACK THESE

$$1. \text{sqrt}(\text{Lightning Bolt}) + \text{Square}^2 = \boxed{}$$

$$2. (\text{Crescent Moon}^2 - \text{Pentagon}^2) \div (\text{Crescent Moon} - \text{Pentagon}) = \boxed{}$$

CODE 1

$$3. (\text{Square}^2 - \text{Crescent Moon}^2) \div (\text{Square} - \text{Crescent Moon}) = \boxed{}$$

$$4. \text{Pentagon}^2 + \text{Circle}^2 + \text{Square}^2 = \boxed{}$$

CODE 2

$$5. \text{Crescent Moon}^2 + \text{Pentagon}^2 + \text{Lightning Bolt}^2 = \boxed{}$$

$$6. 3 \text{Square}^2 - 2 \text{Lightning Bolt}^2 = \boxed{}$$

CODE 3

$$7. (2 \text{Circle} - \text{Lightning Bolt})^2 = \boxed{}$$

$$8. \text{sqrt}(\text{Lightning Bolt}) + \text{Lightning Bolt}^2 = \boxed{}$$

CODE 4

$$9. 3 \text{Pentagon}^2 - 2 \text{Lightning Bolt}^2 = \boxed{}$$

$$10. (\text{Square} + \text{Lightning Bolt})^2 - (\text{Square} - \text{Lightning Bolt})^2 = \boxed{}$$

4 THE VAULT CODE

Write the ONES digit of your answers to problems 2, 4, 6, 8 (the ones tagged CODE 1-4), in that order. That opens the submerged titanium archive.

Answer Key

Subaquatic Cybernetics The Siren-Class Android Cipher · Grade 10 Crack the Code

The key

 moon = 7 (hidden)
  circle = 10 (hidden)
  lightning bolt = 25
  pentagon = 24 (hidden)
 square = 23 (hidden)
  star = 21 (hidden)

Every symbol is a whole number from 1 to 30.

1. $\sqrt{\text{lightning bolt}} + \text{square}^2$ (sqrt(lightning bolt) + square^2) **534**
2. $(\text{moon}^2 - \text{pentagon}^2) \div (\text{moon} - \text{pentagon})$ ((moon^2 - pentagon^2) / (moon - pentagon)) **31**
3. $(\text{square}^2 - \text{moon}^2) \div (\text{square} - \text{moon})$ ((square^2 - moon^2) / (square - moon)) **30**
4. $\text{pentagon}^2 + \text{circle}^2 + \text{square}^2$ (pentagon^2 + circle^2 + square^2) **1205**
5. $\text{moon}^2 + \text{pentagon}^2 + \text{lightning bolt}^2$ (moon^2 + pentagon^2 + lightning bolt^2) **1250**
6. $3\text{square}^2 - 2\text{lightning bolt}^2$ (3 x square^2 - 2 x lightning bolt^2) **337**
7. $(2\text{circle} - \text{lightning bolt})^2$ ((2 x circle - lightning bolt)^2) **25**
8. $\sqrt{\text{lightning bolt}} + \text{lightning bolt}^2$ (sqrt(lightning bolt) + lightning bolt^2) **630**
9. $3\text{pentagon}^2 - 2\text{lightning bolt}^2$ (3 x pentagon^2 - 2 x lightning bolt^2) **478**
10. $(\text{square} + \text{lightning bolt})^2 - (\text{square} - \text{lightning bolt})^2$ ((square + lightning bolt)^2 - (square - lightning bolt)^2) **2300**

Vault code: 1 5 7 0