



Cryptkeeper Math Codebreaker

Solve the algebraic symbol equations to determine the four-digit combination that unseals the haunted crypt.

Name: _____ Date: _____

1 THE KEY

$$\begin{array}{l} \text{+} = 4 \quad \text{?} = \square \quad \square = \square \quad \text{?} = \square \quad \text{hexagon} = 5 \\ \text{star} = \square \end{array}$$

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.

$$\bullet + 3 \star = 25$$

$$2 \bullet - 2 \star = 42$$

$$\blacksquare \times \bullet - \star = 527$$

$$\bigcirc^2 = 400$$

3 CRACK THESE

$$1. (\bullet - \bigcirc) \times (\bullet + \bigcirc) = \square$$

$$2. \text{sqrt}(\text{+}) \times \blacksquare = \square$$

CODE 1

$$3. 2 \text{hexagon}^2 + \star = \square$$

$$4. 3 \bigcirc - 2 \star + \text{+} = \square$$

CODE 2

$$5. \text{sqrt}(\text{+}) \times \bigcirc = \square$$

$$6. 2 \text{+}^2 + \star = \square$$

CODE 3

$$7. \star^2 + \bigcirc^2 = \square$$

$$8. \bigcirc^2 - \star = \square$$

CODE 4

$$9. \text{+}^3 - \bullet = \square$$

$$10. (\blacksquare + \text{hexagon})^2 = \square$$

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 haunted crypt safe.

Answer Key

Cryptkeeper Math Codebreaker · Grade 8 Crack the Code

The key

+ cross = 4 ○ ring = 20 (hidden) ■ square = 24 (hidden) ● circle = 22 (hidden) ⬡ hexagon = 5
 ★ star = 1 (hidden)

Every symbol is a whole number from 1 to 30.

1. $(● - ○) \times (● + ○)$ ((circle - ring) x (circle + ring)) 84
2. $\text{sqrt}(+) \times \blacksquare$ (sqrt(cross) x square) 48
3. $2\hexagon^2 + \star$ (2 x hexagon^2 + star) 51
4. $3○ - 2\star + +$ (3 x ring - 2 x star + cross) 62
5. $\text{sqrt}(+) \times ○$ (sqrt(cross) x ring) 40
6. $2+^2 + \star$ (2 x cross^2 + star) 33
7. $\star^2 + ○^2$ (star^2 + ring^2) 401
8. $○^2 - \star$ (ring^2 - star) 399
9. $+^3 - ●$ (cross^3 - circle) 42
10. $(\blacksquare + \hexagon)^2$ ((square + hexagon)^2) 841

Vault code: **8 2 3 9**