

Crack the Vault Code

Someone locked the vault with a 4-digit code. Work out what each shape is worth and crack it.

Name: _____ Date: _____

1 THE KEY

$$\begin{array}{l} \diamondsuit = \square \quad \textcircled{2} = \square \quad \bigcirc = 4 \quad \text{?} = \square \quad \star = \square \\ \text{⚡} = 18 \end{array}$$

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.

$$\begin{array}{l} 2\text{☾} + 3\star = 65 \\ 2\text{☾} - \star = 21 \end{array}$$

$$2\blacklozenge + \text{☾} = 50$$

$$2\blacklozenge + \star = 39$$

3 CRACK THESE

$$1. \text{sqrt}(\text{☾}) + \star^2 = \square$$

$$2. 2\text{☾}^2 + \bigcirc = \square$$

CODE 1

$$3. 2\star^2 + \text{⚡} = \square$$

$$4. \text{sqrt}(\text{☾}) + \star = \square$$

CODE 2

$$5. \blacklozenge^3 - \blacklozenge = \square$$

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

CODE 3

$$7. \star^2 - \text{☾} = \square$$

$$8. \text{⚡}^3 - \blacklozenge = \square$$

CODE 4

$$9. (\star - \bigcirc) \times (\star + \bigcirc) = \square$$

$$10. (\blacklozenge + \blacklozenge)^2 = \square$$

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 vault.

The key

Every symbol is a whole number from 1 to 30.

- Vault code: 6 5 2 5**