



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

$$\star = \square \quad \blacklozenge = 8 \quad \blacktriangle = 6 \quad \lightningbolt = 7 \quad \blacksquare = 2 \quad \text{?} = \square$$

Every symbol is a whole number from 1 to 12. A number in front of a shape means multiply: 2 stars = 2 x star.

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.

$$\star + \lightningbolt = 10$$

$$\text{?} + \text{?} = 10$$

3 CRACK THESE

$$1. \blacktriangle \times \blacksquare - \blacklozenge = \square$$

$$2. 3\lightningbolt - \star = \square$$

CODE 1

$$3. 3\lightningbolt - \text{?} = \square$$

$$4. \blacktriangle \times \text{?} - \blacklozenge = \square$$

CODE 2

$$5. \blacksquare \times \blacktriangle = \square$$

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

CODE 3

$$7. \blacksquare \times \blacktriangle + \blacklozenge = \square$$

$$8. \blacksquare \times \star = \square$$

CODE 4

$$9. 10\star + \lightningbolt = \square$$

$$10. \blacksquare \times \blacktriangle + \text{?} = \square$$

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.

Answer Key

Crack the Vault Code · Grade 3 Crack the Code

The key

★ star = 3 (hidden) ⬠ pentagon = 8 ▲ triangle = 6 ⚡ lightning bolt = 7 ■ square = 2
 ☾ moon = 5 (hidden)

Every symbol is a whole number from 1 to 12.

- | | | |
|-----|--|----|
| 1. | ▲ × ■ - ⬠ (triangle x square - pentagon) | 4 |
| 2. | 3 ⚡ - ★ (3 x lightning bolt - star) | 18 |
| 3. | 3 ⚡ - ☾ (3 x lightning bolt - moon) | 16 |
| 4. | ▲ × ☾ - ⬠ (triangle x moon - pentagon) | 22 |
| 5. | ■ × ▲ (square x triangle) | 12 |
| 6. | 2 ★ + ☾ (2 x star + moon) | 11 |
| 7. | ■ × ▲ + ⬠ (square x triangle + pentagon) | 20 |
| 8. | ■ × ★ (square x star) | 6 |
| 9. | 10 ★ + ⚡ (10 x star + lightning bolt) | 37 |
| 10. | ■ × ▲ + ☾ (square x triangle + moon) | 17 |

Vault code: 8 2 1 6