



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

$$\blacksquare = 12 \quad \star = 3 \quad \textcircled{?} = \square \quad \heartsuit = \square \quad \diamondsuit = \square \quad \text{☾} = 10$$

Every symbol is a whole number from 1 to 15. 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.

$$\bigcirc + \star = 17$$

$$\blacklozenge + \bigcirc = 22$$

$$\heartsuit + \blacklozenge = 12$$

3 CRACK THESE

$$1. \quad 100 \bigcirc + \heartsuit = \square$$

$$2. \quad 3 \heartsuit + 2 \star = \square$$

CODE 1

$$3. \quad 100 \heartsuit + \blacksquare = \square$$

$$4. \quad 3 \star + 2 \blacklozenge = \square$$

CODE 2

$$5. \quad \text{☾} \times \star = \square$$

$$6. \quad \heartsuit \times \text{☾} + \star = \square$$

CODE 3

$$7. \quad \blacksquare \times \star = \square$$

$$8. \quad 10 \text{☾} - \star = \square$$

CODE 4

$$9. \quad 10 \star - \bigcirc = \square$$

$$10. \quad (\text{☾} + \blacklozenge) \times \bigcirc = \square$$

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 4 Crack the Code

The key

■ square = 12 ★ star = 3 ○ ring = 14 (hidden) ♥ heart = 4 (hidden) ♦ diamond = 8 (hidden)
 ☾ moon = 10

Every symbol is a whole number from 1 to 15.

- | | | |
|-----|--|------|
| 1. | $100 \bigcirc + \heartsuit$ (100 x ring + heart) | 1404 |
| 2. | $3 \heartsuit + 2 \star$ (3 x heart + 2 x star) | 18 |
| 3. | $100 \heartsuit + \blacksquare$ (100 x heart + square) | 412 |
| 4. | $3 \star + 2 \blacklozenge$ (3 x star + 2 x diamond) | 25 |
| 5. | $\text{☾} \times \star$ (moon x star) | 30 |
| 6. | $\heartsuit \times \text{☾} + \star$ (heart x moon + star) | 43 |
| 7. | $\blacksquare \times \star$ (square x star) | 36 |
| 8. | $10 \text{☾} - \star$ (10 x moon - star) | 97 |
| 9. | $10 \star - \bigcirc$ (10 x star - ring) | 16 |
| 10. | $(\text{☾} + \blacklozenge) \times \bigcirc$ ((moon + diamond) x ring) | 252 |

Vault code: **8 5 3 7**