



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

$$\blacktriangle = 5 \quad \smile = 6 \quad \diamondsuit = \square \quad \star = \square \quad + = 11 \quad \blacksquare = 3$$

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.

$$5\star = 45$$

$$\diamondsuit + \blacksquare = 5$$

3 CRACK THESE

$$1. \diamondsuit \times \smile = \square$$

$$2. 2\smile + \diamondsuit = \square$$

CODE 1

$$3. 3\star - \smile = \square$$

$$4. \blacktriangle \times \diamondsuit + \smile = \square$$

CODE 2

$$5. \blacktriangle + \star + + = \square$$

$$6. 5\blacksquare - \diamondsuit = \square$$

CODE 3

$$7. \star \times \diamondsuit = \square$$

$$8. \blacksquare + \diamondsuit + \smile = \square$$

CODE 4

$$9. 3\smile - \blacksquare = \square$$

$$10. \smile \times \blacksquare + \blacktriangle = \square$$

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

▲ triangle = **5** ☾ moon = **6** ◆ diamond = **2** (hidden) ★ star = **9** (hidden) + cross = **11**
 ■ square = **3**

Every symbol is a whole number from 1 to 12.

- | | | |
|-----|---------------------------------------|-----------|
| 1. | ◆ × ☾ (diamond x moon) | 12 |
| 2. | 2☾ + ◆ (2 x moon + diamond) | 14 |
| 3. | 3★ - ☾ (3 x star - moon) | 21 |
| 4. | ▲ × ◆ + ☾ (triangle x diamond + moon) | 16 |
| 5. | ▲ + ★ + + (triangle + star + cross) | 25 |
| 6. | 5■ - ◆ (5 x square - diamond) | 13 |
| 7. | ★ × ◆ (star x diamond) | 18 |
| 8. | ■ + ◆ + ☾ (square + diamond + moon) | 11 |
| 9. | 3☾ - ■ (3 x moon - square) | 15 |
| 10. | ☾ × ■ + ▲ (moon x square + triangle) | 23 |

Vault code: **4 6 3 1**