

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

$$\blacksquare = 9 \quad \text{pentagon with ?} = \square \quad \blacktriangle = 3 \quad \smile = 14 \quad \text{circle with ?} = \square \quad \star = \square$$

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.

$$\text{pentagon} + \text{pentagon} + \text{pentagon} = 18$$

$$\bullet \times \blacksquare = 117$$

$$\star + \bullet = 17$$

3 CRACK THESE

$$1. \star \times \smile + \blacksquare = \square$$

$$2. (\smile + \blacktriangle) \times \star = \square$$

CODE 1

$$3. \bullet \times \smile = \square$$

$$4. (\text{pentagon} - \blacktriangle) \times \star = \square$$

CODE 2

$$5. 3\text{pentagon} + 2\smile = \square$$

$$6. 3\star + 2\smile = \square$$

CODE 3

$$7. 10\blacktriangle - \bullet = \square$$

$$8. 10\bullet - \blacksquare = \square$$

CODE 4

$$9. \bullet \times \text{pentagon} = \square$$

$$10. \text{pentagon} \times \smile - \star = \square$$

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 = 9
 𐀀 pentagon = 6 (hidden)
 ▲ triangle = 3
 ☾ moon = 14
 ● circle = 13 (hidden)

★ star = 4 (hidden)

Every symbol is a whole number from 1 to 15.

- | | | |
|-----|--|-----|
| 1. | ★ × ☾ + ■ (star x moon + square) | 65 |
| 2. | (☾ + ▲) × ★ ((moon + triangle) x star) | 68 |
| 3. | ● × ☾ (circle x moon) | 182 |
| 4. | (𐀀 - ▲) × ★ ((pentagon - triangle) x star) | 12 |
| 5. | 3𐀀 + 2☾ (3 x pentagon + 2 x moon) | 46 |
| 6. | 3★ + 2☾ (3 x star + 2 x moon) | 40 |
| 7. | 10▲ - ● (10 x triangle - circle) | 17 |
| 8. | 10● - ■ (10 x circle - square) | 121 |
| 9. | ● × 𐀀 (circle x pentagon) | 78 |
| 10. | 𐀀 × ☾ - ★ (pentagon x moon - star) | 80 |

Vault code: **8 2 0 1**