



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

$$\blacklozenge = 9 \quad \triangle = \square \quad \star = \square \quad \smile = 5 \quad \textcircled{?} = \square \quad \heartsuit = 17$$

Every symbol is a whole number from 1 to 20. 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.

$$\blacktriangle + \blacklozenge = 15$$

$$\star + \smile = 19$$

$$5\bullet = 65$$

3 CRACK THESE

$$1. \star \times \blacktriangle - \blacklozenge \times \smile = \square$$

$$2. (\bullet + \heartsuit) \div \smile = \square$$

CODE 1

$$3. \blacktriangle \times \smile - \heartsuit = \square$$

$$4. (\blacktriangle + \heartsuit) \times \blacklozenge = \square$$

CODE 2

$$5. \heartsuit \times \star + \blacklozenge \times \smile = \square$$

$$6. \star \times \smile - \blacktriangle = \square$$

CODE 3

$$7. (\smile + \blacklozenge) \times \bullet = \square$$

$$8. \star \times \smile + \bullet \times \heartsuit = \square$$

CODE 4

$$9. \blacktriangle + \star \times \blacklozenge = \square$$

$$10. \smile + \bullet \times \star = \square$$

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 5 Crack the Code

The key

◆ diamond = 9 ▲ triangle = 6 (hidden) ★ star = 14 (hidden) ☾ moon = 5 ● circle = 13 (hidden)
 ♥ heart = 17

Every symbol is a whole number from 1 to 20.

1. ★ × ▲ - ◆ × ☾ (star x triangle - diamond x moon) 39
2. (● + ♥) ÷ ☾ ((circle + heart) / moon) 6
3. ▲ × ☾ - ♥ (triangle x moon - heart) 13
4. (▲ + ♥) × ◆ ((triangle + heart) x diamond) 207
5. ♥ × ★ + ◆ × ☾ (heart x star + diamond x moon) 283
6. ★ × ☾ - ▲ (star x moon - triangle) 64
7. (☾ + ◆) × ● ((moon + diamond) x circle) 182
8. ★ × ☾ + ● × ♥ (star x moon + circle x heart) 291
9. ▲ + ★ × ◆ (triangle + star x diamond) 132
10. ☾ + ● × ★ (moon + circle x star) 187

Vault code: **6 7 4 1**