



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

$$\textcircled{?} = \square \quad \blacklozenge = 4 \quad \textcircled{?} = \square \quad \heartsuit = 10 \quad \textcircled{\smile} = 12 \quad \star = \square$$

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.

$$\bigcirc \times \blacklozenge = 28$$

$$\bullet + \textcircled{\smile} = 26$$

$$\star + \star + \star = 27$$

3 CRACK THESE

$$1. \bullet \times \heartsuit - \star = \square$$

$$2. \blacklozenge \times \heartsuit = \square$$

CODE 1

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

$$4. 100\bullet + \blacklozenge = \square$$

CODE 2

$$5. \heartsuit \times \textcircled{\smile} - \bigcirc = \square$$

$$6. 100\star + \bigcirc = \square$$

CODE 3

$$7. \blacklozenge \times \bigcirc + \heartsuit = \square$$

$$8. \bullet \times \bigcirc + \heartsuit = \square$$

CODE 4

$$9. (\textcircled{\smile} + \bigcirc) \times \blacklozenge = \square$$

$$10. 10\bigcirc - \blacklozenge = \square$$

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

 ring = 7 (hidden)
  pentagon = 4
  circle = 14 (hidden)
  heart = 10
  moon = 12
 star = 9 (hidden)

Every symbol is a whole number from 1 to 15.

- | | | |
|-----|--|------|
| 1. | $\bullet \times \heartsuit - \star$ (circle x heart - star) | 131 |
| 2. | $\blacklozenge \times \heartsuit$ (pentagon x heart) | 40 |
| 3. | $\blacklozenge \times \bullet$ (pentagon x circle) | 56 |
| 4. | $100\bullet + \blacklozenge$ (100 x circle + pentagon) | 1404 |
| 5. | $\heartsuit \times \smile - \bigcirc$ (heart x moon - ring) | 113 |
| 6. | $100\star + \bigcirc$ (100 x star + ring) | 907 |
| 7. | $\blacklozenge \times \bigcirc + \heartsuit$ (pentagon x ring + heart) | 38 |
| 8. | $\bullet \times \bigcirc + \heartsuit$ (circle x ring + heart) | 108 |
| 9. | $(\smile + \bigcirc) \times \blacklozenge$ ((moon + ring) x pentagon) | 76 |
| 10. | $10\bigcirc - \blacklozenge$ (10 x ring - pentagon) | 66 |

Vault code: **0 4 7 8**