



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

$$\heartsuit = 5 \quad \text{?} = \square \quad \text{?} = \square \quad \text{?} = \square \quad \bigcirc = 4 \quad \bullet = 3$$

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.

$$\heartsuit + \bullet = 15$$

$$2 \text{ ?} = 20$$

$$\heartsuit + \heartsuit + \heartsuit = 27$$

3 CRACK THESE

$$1. \ 10 \heartsuit - \heartsuit = \square$$

$$2. \ \heartsuit \times \text{?} = \square$$

CODE 1

$$3. \ 10 \heartsuit - \heartsuit = \square$$

$$4. \ \bullet \times \heartsuit = \square$$

CODE 2

$$5. \ 3 \heartsuit + 2 \heartsuit = \square$$

$$6. \ \heartsuit \times \heartsuit - \text{?} = \square$$

CODE 3

$$7. \ 100 \heartsuit + \bullet = \square$$

$$8. \ (\heartsuit + \bigcirc) \times \text{?} = \square$$

CODE 4

$$9. \ 100 \heartsuit + \heartsuit = \square$$

$$10. \ \heartsuit \times \heartsuit + \bigcirc = \square$$

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

 heart = **5**
  hexagon = **12** (hidden)
  moon = **10** (hidden)
  pentagon = **9** (hidden)
  ring = **4**
 circle = **3**

Every symbol is a whole number from 1 to 15.

- | | | |
|-----|---|------------|
| 1. | $10 \text{♥} - \text{⬡}$ (10 x heart - hexagon) | 38 |
| 2. | $\text{♥} \times \text{☾}$ (heart x moon) | 50 |
| 3. | $10 \text{♥} - \text{⬠}$ (10 x heart - pentagon) | 41 |
| 4. | $\text{●} \times \text{⬠}$ (circle x pentagon) | 27 |
| 5. | $3 \text{⬠} + 2 \text{♥}$ (3 x pentagon + 2 x heart) | 37 |
| 6. | $\text{⬡} \times \text{♥} - \text{☾}$ (hexagon x heart - moon) | 50 |
| 7. | $100 \text{♥} + \text{●}$ (100 x heart + circle) | 503 |
| 8. | $(\text{♥} + \text{○}) \times \text{☾}$ ((heart + ring) x moon) | 90 |
| 9. | $100 \text{♥} + \text{⬠}$ (100 x heart + pentagon) | 509 |
| 10. | $\text{♥} \times \text{⬠} + \text{○}$ (heart x pentagon + ring) | 49 |

Vault code: **0700**