



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

$$\text{?} = \square \quad \text{hexagon} = 6 \quad \text{heart} = 9 \quad \text{crescent} = \square \quad \text{diamond} = 20 \quad \text{triangle with ?} = \square$$

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.

$$\text{crescent} - \text{hexagon} = 6$$

$$\text{triangle} + \text{crescent} = 23$$

$$\text{star}^2 = 256$$

3 CRACK THESE

$$1. \text{hexagon} \times \text{star} - \text{heart} = \square$$

$$2. 10 \text{crescent} - \text{hexagon} = \square$$

CODE 1

$$3. 3 \text{heart} + 2 \text{hexagon} = \square$$

$$4. \text{triangle} \times \text{heart} - \text{hexagon} \times \text{star} = \square$$

CODE 2

$$5. \text{heart} + \text{diamond} \times \text{hexagon} = \square$$

$$6. 3 \text{hexagon} + 2 \text{triangle} = \square$$

CODE 3

$$7. \text{hexagon} \times \text{heart} \times \text{triangle} = \square$$

$$8. \text{triangle} \times \text{diamond} + \text{hexagon} \times \text{star} = \square$$

CODE 4

$$9. \text{heart} + \text{crescent} \times \text{star} = \square$$

$$10. \text{diamond} \times \text{crescent} \times \text{star} = \square$$

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

 circle = **16** (hidden)
  hexagon = **6**
  heart = **9**
  moon = **12** (hidden)
  diamond = **20**
 triangle = **11** (hidden)

Every symbol is a whole number from 1 to 20.

- | | | |
|-----|---|-------------|
| 1. |  x  -  (hexagon x circle - heart) | 87 |
| 2. | 10  -  (10 x moon - hexagon) | 114 |
| 3. | 3  + 2  (3 x heart + 2 x hexagon) | 39 |
| 4. |  x  -  x  (triangle x heart - hexagon x circle) | 3 |
| 5. |  +  x  (heart + diamond x hexagon) | 129 |
| 6. | 3  + 2  (3 x hexagon + 2 x triangle) | 40 |
| 7. |  x  x  (hexagon x heart x triangle) | 594 |
| 8. |  x  +  x  (triangle x diamond + hexagon x circle) | 316 |
| 9. |  +  x  (heart + moon x circle) | 201 |
| 10. |  x  x  (diamond x moon x circle) | 3840 |

Vault code: **4 3 0 6**