



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

$$\text{Crescent Moon} = \square \quad \text{Lightning Bolt} = 6 \quad \text{Heart} = 8 \quad \text{Diamond with ?} = \square \quad \text{Black Circle} = 13 \quad \text{Square with ?} = \square$$

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.

$$\text{Crescent Moon} \times \text{Black Circle} = 91$$

$$\text{Crescent Moon} - \text{Diamond} = 3$$

$$\text{Black Square} + \text{Black Square} + \text{Black Square} = 15$$

3 CRACK THESE

$$1. \text{ Heart} \times \text{Crescent Moon} + \text{Black Square} = \square$$

$$2. \text{ Lightning Bolt} \times \text{Black Circle} + \text{Heart} = \square$$

CODE 1

$$3. \text{ Crescent Moon} \times \text{Black Square} - \text{Heart} = \square$$

$$4. \text{ Diamond} \times \text{Lightning Bolt} - \text{Black Circle} = \square$$

CODE 2

$$5. (\text{Lightning Bolt} + \text{Heart}) \times \text{Crescent Moon} = \square$$

$$6. \text{ Lightning Bolt} \times \text{Diamond} = \square$$

CODE 3

$$7. (\text{Crescent Moon} + \text{Black Square}) \times \text{Heart} = \square$$

$$8. 10 \text{ Lightning Bolt} - \text{Crescent Moon} = \square$$

CODE 4

$$9. \text{ Black Square} \times \text{Heart} \div \text{Diamond} = \square$$

$$10. 100 \text{ Heart} + \text{Lightning Bolt} = \square$$

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

 moon = 7 (hidden)
  lightning bolt = 6
  heart = 8
  diamond = 4 (hidden)
  circle = 13
 square = 5 (hidden)

Every symbol is a whole number from 1 to 15.

- | | | |
|-----|---|-----|
| 1. | $\heartsuit \times \text{moon} + \blacksquare$ (heart x moon + square) | 61 |
| 2. | $\text{lightning bolt} \times \text{circle} + \heartsuit$ (lightning bolt x circle + heart) | 86 |
| 3. | $\text{moon} \times \blacksquare - \heartsuit$ (moon x square - heart) | 27 |
| 4. | $\text{diamond} \times \text{lightning bolt} - \text{circle}$ (diamond x lightning bolt - circle) | 11 |
| 5. | $(\text{lightning bolt} + \heartsuit) \times \text{moon}$ ((lightning bolt + heart) x moon) | 98 |
| 6. | $\text{lightning bolt} \times \text{diamond}$ (lightning bolt x diamond) | 24 |
| 7. | $(\text{moon} + \blacksquare) \times \heartsuit$ ((moon + square) x heart) | 96 |
| 8. | $10 \times \text{lightning bolt} - \text{moon}$ (10 x lightning bolt - moon) | 53 |
| 9. | $\blacksquare \times \heartsuit \div \text{diamond}$ (square x heart / diamond) | 10 |
| 10. | $100 \times \heartsuit + \text{lightning bolt}$ (100 x heart + lightning bolt) | 806 |

Vault code: **6 1 4 3**