



The Lost Chapter Vault

Determine the numeric value of each library symbol to crack the four-digit code that opens the protected archive cabinet.

Name: _____ Date: _____

1 THE KEY

$$\boxed{?} = \boxed{} \quad \text{⚡} = \boxed{} \quad \text{◇} = \boxed{} \quad \text{⬠} = 18 \quad \text{★} = 14 \quad \text{☾} = 8$$

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.

$$2 \text{ ⬠} + \text{★} = 22$$

$$\text{⚡}^2 = 100$$

$$2 \text{ ■} + \text{☾} = 48$$

3 CRACK THESE

$$1. \text{★} \times \text{⚡} - \text{⬠} = \boxed{}$$

$$2. \text{⚡} \div 2 + \text{⬠} = \boxed{}$$

CODE 1

$$3. \text{⚡} \times \text{★} - \text{☾} = \boxed{}$$

$$4. \text{☾} \times (\text{■} - \text{⚡}) = \boxed{}$$

CODE 2

$$5. \text{⬠} \times (\text{■} - \text{⬠}) = \boxed{}$$

$$6. 10 \text{ ☾} - \text{■} = \boxed{}$$

CODE 3

$$7. 10 \text{ ⬠} - \text{⚡} = \boxed{}$$

$$8. \text{☾} \times \text{⬠} \times \text{⚡} = \boxed{}$$

CODE 4

$$9. \text{⚡} + \text{☾} \times \text{★} = \boxed{}$$

$$10. \text{★} \times \text{⚡} + \text{⬠} \times \text{⬠} = \boxed{}$$

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 heavy oak cabinet.

Answer Key

The Lost Chapter Vault · Grade 5 Crack the Code

The key

 square = **20** (hidden)
  lightning bolt = **10** (hidden)
  diamond = **4** (hidden)
  hexagon = **18**
 star = **14**
  moon = **8**

Every symbol is a whole number from 1 to 20.

1. $\star \times \text{lightning bolt} - \text{hexagon}$ (star x lightning bolt - hexagon) **122**
2. $\text{lightning bolt} \div 2 + \text{diamond}$ (lightning bolt / 2 + diamond) **9**
3. $\text{lightning bolt} \times \star - \text{moon}$ (lightning bolt x star - moon) **132**
4. $\text{moon} \times (\text{square} - \text{lightning bolt})$ (moon x (square - lightning bolt)) **80**
5. $\text{diamond} \times (\text{square} - \text{hexagon})$ (diamond x (square - hexagon)) **8**
6. $10 \times \text{moon} - \text{square}$ (10 x moon - square) **60**
7. $10 \times \text{hexagon} - \text{lightning bolt}$ (10 x hexagon - lightning bolt) **170**
8. $\text{moon} \times \text{diamond} \times \text{lightning bolt}$ (moon x diamond x lightning bolt) **320**
9. $\text{lightning bolt} + \text{moon} \times \star$ (lightning bolt + moon x star) **122**
10. $\star \times \text{lightning bolt} + \text{diamond} \times \text{hexagon}$ (star x lightning bolt + diamond x hexagon) **212**

Vault code: 9000