



Santa's Workshop Code Breaker

Determine the numerical value of each holiday symbol to discover the four-digit combination that unlocks the North Pole vault.

Name: _____ Date: _____

1 THE KEY

$$\begin{array}{l} \text{⚡} = 14 \quad \text{⬠} = 12 \quad \text{▲} = 15 \quad \text{⛶} = \boxed{} \quad \text{☆} = \boxed{} \\ \text{♥} = \boxed{} \end{array}$$

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.

$$\text{♥} + \text{▲} = 31$$

$$2 \text{ ☆} + \text{▲} = 31$$

$$2 \text{ ⛶} + \text{▲} = 53$$

3 CRACK THESE

$$1. \quad 10 \text{ ⚡} - \text{☆} = \boxed{}$$

$$2. \quad \text{⬠} \times \text{♥} - \text{☆} \times \text{⛶} = \boxed{}$$

CODE 1

$$3. \quad (\text{⚡} + \text{♥}) \times \text{⬠} = \boxed{}$$

$$4. \quad \text{⚡} \times \text{♥} \div \text{☆} = \boxed{}$$

CODE 2

$$5. \quad \text{⛶} \times \text{⚡} + \text{▲} \times \text{☆} = \boxed{}$$

$$6. \quad \text{⚡} + \text{☆} \times \text{♥} = \boxed{}$$

CODE 3

$$7. \quad \text{▲} \times \text{♥} \times \text{⬠} = \boxed{}$$

$$8. \quad \text{⚡} \times \text{☆} \times \text{▲} = \boxed{}$$

CODE 4

$$9. \quad 10 \text{ ▲} - \text{⬠} = \boxed{}$$

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

4 THE VAULT CODE

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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 santas master toy.

Answer Key

Santa's Workshop Code Breaker · Grade 5 Crack the Code

The key

⚡ lightning bolt = **14** ⬡ hexagon = **12** ▲ triangle = **15** + cross = **19** (hidden) ★ star = **8** (hidden)
 ♥ heart = **16** (hidden)

Every symbol is a whole number from 1 to 20.

1. $10 \text{ ⚡ } - \text{ ★ }$ (10 x lightning bolt - star) **132**
2. $\text{ ⬡ } \times \text{ ♥ } - \text{ ★ } \times \text{ + }$ (hexagon x heart - star x cross) **40**
3. $(\text{ ⚡ } + \text{ ♥ }) \times \text{ ⬡ }$ ((lightning bolt + heart) x hexagon) **360**
4. $\text{ ⚡ } \times \text{ ♥ } \div \text{ ★ }$ (lightning bolt x heart / star) **28**
5. $\text{ + } \times \text{ ⚡ } + \text{ ▲ } \times \text{ ★ }$ (cross x lightning bolt + triangle x star) **386**
6. $\text{ ⚡ } + \text{ ★ } \times \text{ ♥ }$ (lightning bolt + star x heart) **142**
7. $\text{ ▲ } \times \text{ ♥ } \times \text{ ⬡ }$ (triangle x heart x hexagon) **2880**
8. $\text{ ⚡ } \times \text{ ★ } \times \text{ ▲ }$ (lightning bolt x star x triangle) **1680**
9. $10 \text{ ▲ } - \text{ ⬡ }$ (10 x triangle - hexagon) **138**
10. $\text{ ⬡ } + \text{ ♥ } \times \text{ ⚡ }$ (hexagon + heart x lightning bolt) **236**

Vault code: **0820**