



Enchanted Equation Decoder

Determine the numeric value of each fairy tale symbol to reveal the secret combination for the dragon's iron chest.

Name: _____ Date: _____

1 THE KEY

$$\begin{array}{cccccc} \text{⚡} = \square & \star = 6 & \blacktriangle = -6 & \text{☾} = \square & \blacksquare = 5 & \oplus = \square \end{array}$$

Every symbol is a whole number from -9 to 20 (some are negative!). A number in front of a shape means multiply: 2 stars = 2 x star. A small 2 after a shape means square it: star² = star 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.

$$\oplus + 2 = 20$$

$$\oplus - \text{⚡} = 26$$

$$\text{☾} + \blacksquare = 0$$

3 CRACK THESE

$$1. \text{⚡} - \blacktriangle = \square$$

$$2. \oplus + \text{⚡} = \square$$

CODE 1

$$3. 3\text{☾} - 2\text{⚡} + \oplus = \square$$

$$4. (\blacksquare + \oplus) \times \blacktriangle = \square$$

CODE 2

$$5. \star \times \text{⚡} - \oplus = \square$$

$$6. \text{☾} \times (\blacksquare - \text{⚡}) = \square$$

CODE 3

$$7. \star \times \text{☾} - \oplus = \square$$

$$8. \blacksquare \times \text{⚡} = \square$$

CODE 4

$$9. \blacktriangle - \blacksquare = \square$$

$$10. \text{⚡}^2 + \oplus = \square$$

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 dragons iron chest.

Answer Key

Enchanted Equation Decoder · Grade 7 Crack the Code

The key

⚡ lightning bolt = **-8** (hidden) ★ star = **6** ▲ triangle = **-6** ☾ moon = **-5** (hidden) ■ square = **5**
 ⊕ cross = **18** (hidden)

Every symbol is a whole number from -9 to 20 (some are negative!).

1. ⚡ - ▲ (lightning bolt - triangle) **-2**
2. ⊕ + ⚡ (cross + lightning bolt) **10**
3. 3☾ - 2⚡ + ⊕ (3 x moon - 2 x lightning bolt + cross) **19**
4. (■ + ⊕) × ▲ ((square + cross) x triangle) **-138**
5. ★ × ⚡ - ⊕ (star x lightning bolt - cross) **-66**
6. ☾ × (■ - ⚡) (moon x (square - lightning bolt)) **-65**
7. ★ × ☾ - ⊕ (star x moon - cross) **-48**
8. ■ × ⚡ (square x lightning bolt) **-40**
9. ▲ - ■ (triangle - square) **-11**
10. ⚡² + ⊕ (lightning bolt² + cross) **82**

Vault code: **0850**