



The Grand Slam Locker Cipher

Solve the mathematical equations by determining the numeric value of each baseball icon to unlock the championship trophy display case.

Name: _____ Date: _____

1 THE KEY

$$\bigcirc = -1 \quad \blacklozenge = -9 \quad \text{?} = \square \quad \text{?} = \square \quad \text{⚡} = -6 \quad \triangle = \square$$

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.

$$\blacklozenge + \text{⚡} = -9$$

$$\text{☾} + \bigcirc = -5$$

$$\text{☾} - \blacktriangle = -10$$

3 CRACK THESE

$$1. \text{⚡} \times \blacklozenge = \square$$

$$2. \bigcirc^2 - \blacktriangle = \square$$

CODE 1

$$3. (\text{☾} + \blacktriangle) \times \text{⚡} = \square$$

$$4. 3\blacklozenge - 2\blacklozenge + \text{☾} = \square$$

CODE 2

$$5. (\blacklozenge + \blacklozenge) \times \blacktriangle = \square$$

$$6. \bigcirc \times \text{☾} = \square$$

CODE 3

$$7. \blacklozenge \times \text{☾} - \text{⚡} = \square$$

$$8. \blacklozenge + \bigcirc \times \blacklozenge = \square$$

CODE 4

$$9. 3\blacklozenge - 2\text{☾} + \blacktriangle = \square$$

$$10. \text{⚡} \times (\blacklozenge - \bigcirc) = \square$$

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 reinforced glass championship.

Answer Key

The Grand Slam Locker Cipher · Grade 7 Crack the Code

The key

 ring = **-1**
  pentagon = **-9**
  moon = **-4** (hidden)
  hexagon = **-3** (hidden)
  lightning bolt = **-6**
 triangle = **6** (hidden)

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

- | | | |
|-----|--|------------|
| 1. |  x  (lightning bolt x hexagon) | 18 |
| 2. |  ² -  (ring ² - triangle) | -5 |
| 3. | ( + ) x  ((moon + triangle) x lightning bolt) | -12 |
| 4. | 3  - 2  +  (3 x pentagon - 2 x hexagon + moon) | -25 |
| 5. | ( + ) x  ((hexagon + pentagon) x triangle) | -72 |
| 6. |  x  (ring x moon) | 4 |
| 7. |  x  -  (pentagon x moon - lightning bolt) | 42 |
| 8. |  +  x  (pentagon + ring x hexagon) | -6 |
| 9. | 3  - 2  +  (3 x pentagon - 2 x moon + triangle) | -13 |
| 10. |  x ( - ) (lightning bolt x (hexagon - ring)) | 12 |

Vault code: **5 5 4 6**