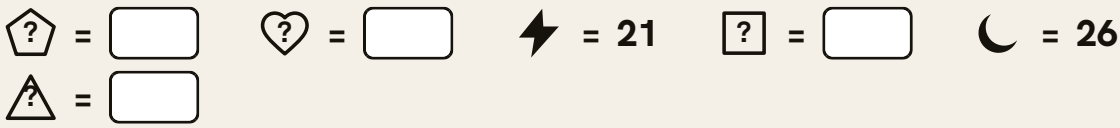
The All-Star Locker Code

Solve the system of equations using basketball gear symbols to determine the four-digit combination to the equipment vault.

Name: _____ **Date:** _____

1 THE KEY



Every symbol is a whole number from 1 to 30. A number in front of a shape means multiply: 2 stars = 2 x star. A small 2 after a shape means square it: star^2 = star x star. sqrt(shape) is the square root of that shape's value.

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.







3 CRACK THESE

1. $▲^2 + ⬟^2 =$ ____

2. $\text{sqrt}(♥) + ▲ =$ ____ CODE 1

3. $(☾ - ⬟) \times (☾ + ⬟) =$ ____

4. $▲^3 - ☾ =$ ____ CODE 2

5. $2ϟ^2 + ☾ =$ ____

6. $⬟^2 - ϟ =$ ____ CODE 3

7. $ϟ^2 + ⬟^2 =$ ____

8. $\text{sqrt}(♥) \times ☾ =$ ____ CODE 4

9. $(♥ + ■)^2 =$ ____

10. $(☾ + ▲)^2 =$ ____

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 varsity team equipment.

TEACHER / PARENT

Answer Key

The All-Star Locker Code · Grade 8 Crack the Code

The key

pentagon = **13** (hidden) · heart = **4** (hidden) · lightning bolt = **21** · square = **7** (hidden) · moon = **26** · triangle = **14** (hidden)

Every symbol is a whole number from 1 to 30.

1.	▲² + ⬟² (triangle^2 + pentagon^2)	**365**
2.	**sqrt(** ♥ **)** + ▲ (sqrt(heart) + triangle)	**16**
3.	**(** ☾ - ⬟ **)** × **(** ☾ + ⬟ **)** ((moon - pentagon) x (moon + pentagon))	**507**
4.	▲³ - ☾ (triangle^3 - moon)	**2718**
5.	**2** ϟ² + ☾ (2 x lightning bolt^2 + moon)	**908**
6.	⬟² - ϟ (pentagon^2 - lightning bolt)	**148**
7.	ϟ² + ⬟² (lightning bolt^2 + pentagon^2)	**610**
8.	**sqrt(** ♥ **)** × ☾ (sqrt(heart) x moon)	**52**
9.	**(** ♥ + ■ **)²** ((heart + square)^2)	**121**
10.	**(** ☾ + ▲ **)²** ((moon + triangle)^2)	**1600**

Vault code: **6 8 8 2**