



Crack the Vault Code

Someone locked the vault with a 4-digit code. Work out what each shape is worth and crack it.

Name: _____ Date: _____

1 THE KEY

$$\textcircled{?} = \square \quad \blacktriangle = 9 \quad \textcircled{?} = \square \quad \textcircled{?} = \square \quad \heartsuit = 7 \quad \text{+} = 15$$

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.

$$\bigcirc + \text{+} = 23$$

$$\bullet + \text{+} = 32$$

$$2 \blacksquare = 28$$

3 CRACK THESE

$$1. \bullet + \blacksquare \times \blacktriangle = \square$$

$$2. \bigcirc \times \bullet + \heartsuit \times \text{+} = \square$$

CODE 1

$$3. \heartsuit \times \bullet + \text{+} \times \blacksquare = \square$$

$$4. \blacksquare \times \heartsuit - \blacktriangle \times \bigcirc = \square$$

CODE 2

$$5. 3\bigcirc + 2\text{+} = \square$$

$$6. \text{+} \times \blacktriangle \times \bullet = \square$$

CODE 3

$$7. \bigcirc \div 2 + \text{+} = \square$$

$$8. \bigcirc \div 2 + \heartsuit = \square$$

CODE 4

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

$$10. \blacktriangle \times \bullet \times \bigcirc = \square$$

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 vault.

Answer Key

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The key

○ ring = 8 (hidden) ▲ triangle = 9 ⬡ hexagon = 14 (hidden) ● circle = 17 (hidden) ♥ heart = 7
 ✚ cross = 15

Every symbol is a whole number from 1 to 20.

1. ● + ⬡ × ▲ (circle + hexagon x triangle) 143
2. ○ × ● + ♥ × ✚ (ring x circle + heart x cross) 241
3. ♥ × ● + ✚ × ⬡ (heart x circle + cross x hexagon) 329
4. ⬡ × ♥ - ▲ × ○ (hexagon x heart - triangle x ring) 26
5. 3○ + 2✚ (3 x ring + 2 x cross) 54
6. ✚ × ▲ × ● (cross x triangle x circle) 2295
7. ○ ÷ 2 + ✚ (ring / 2 + cross) 19
8. ○ ÷ 2 + ♥ (ring / 2 + heart) 11
9. ▲ × ○ - ⬡ (triangle x ring - hexagon) 58
10. ▲ × ● × ○ (triangle x circle x ring) 1224

Vault code: **1 6 5 1**