

The Coral Reef Cryptogram

Solve the sea-shape equations using your knowledge of multi-digit division to find the four-digit code that opens the mermaid queen's pearl safe.

Name: _____ Date: _____

1 THE KEY

$$\heartsuit = \square \quad \bullet = 8 \quad \bigcirc = 14 \quad \blacklozenge = 17 \quad \boxplus = \square \quad \hexagon? = \square$$

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.

$$\heartsuit + \blacklozenge = 23$$

$$\blacklozenge + \bigcirc = 34$$

$$\boxplus \times \blacklozenge = 240$$

3 CRACK THESE

$$1. \blacklozenge \times \blacklozenge \times \heartsuit = \square$$

$$2. 3\heartsuit + 2\blacklozenge = \square$$

CODE 1

$$3. (\blacklozenge + \boxplus) \times \heartsuit = \square$$

$$4. (\heartsuit + \bullet) \times \blacklozenge = \square$$

CODE 2

$$5. \bullet \times \boxplus \times \heartsuit = \square$$

$$6. 3\blacklozenge + 2\bullet = \square$$

CODE 3

$$7. \blacklozenge \times \blacklozenge + \bullet \times \bigcirc = \square$$

$$8. \heartsuit \times \bullet - \blacklozenge = \square$$

CODE 4

$$9. \blacklozenge + \boxplus \times \heartsuit = \square$$

$$10. \bullet \times \blacklozenge - \heartsuit \times \boxplus = \square$$

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 mermaid queens pearl.

Answer Key

The Coral Reef Cryptogram · Grade 5 Crack the Code

The key

 heart = 6 (hidden)
  circle = 8
  ring = 14
  pentagon = 17
  cross = 12 (hidden)

 hexagon = 20 (hidden)

Every symbol is a whole number from 1 to 20.

- | | | |
|-----|--|------|
| 1. |  x  x  (hexagon x pentagon x heart) | 2040 |
| 2. | 3  + 2  (3 x heart + 2 x pentagon) | 52 |
| 3. | ( + ) x  ((pentagon + cross) x heart) | 174 |
| 4. | ( + ) x  ((heart + circle) x hexagon) | 280 |
| 5. |  x  x  (circle x cross x heart) | 576 |
| 6. | 3  + 2  (3 x hexagon + 2 x circle) | 76 |
| 7. |  x  +  x  (hexagon x pentagon + circle x ring) | 452 |
| 8. |  x  -  (heart x circle - pentagon) | 31 |
| 9. |  +  x  (pentagon + cross x heart) | 89 |
| 10. |  x  -  x  (circle x hexagon - heart x cross) | 88 |

Vault code: **2 0 6 1**