

$$2.2 \# 6 \quad x^2 \oplus [8] \odot x = [0] \text{ in } \mathbb{Z}_9$$

$$x^2 + 8 \cdot x = 0 \text{ in } \mathbb{Z}_9$$

Brute Force:

0

$$0^2 + 8 \cdot 0 = 0$$

1

$$1^2 + 8 \cdot 1 = 9 = 0$$

2

$$2^2 + 8 \cdot 2 = 20 = 2$$

3

$$3^2 + 8 \cdot 3 = 9 + 24 = 0 + 24 = 6$$

4

$$4^2 + 8 \cdot 4 = 16 + 32 = 7 + 5 = 12 = 3$$

5

$$5^2 + 8 \cdot 5 = 25 + 40 = 65 = 2$$

6

$$6^2 + 8 \cdot 6 = 36 + 48 = 0 + 3 = 3$$

7

$$7^2 + 8 \cdot 7 = 49 + 56 = 4 + 2 = 6$$

8

$$8^2 + 8 \cdot 8 = 64 + 64 = 1 + 1 = 2$$

Two solutions  
0 and 1

2.2 (pg 36) # 3, 5,

2.1 (pg 31) # 6, 19