

1

$$793 = 6 \times 125 + 43$$

$$125 = 2 \times 43 + 39$$

$$43 = 1 \times 39 + 4$$

$$39 = 9 \times 4 + 3$$

$$4 = 1 \times 3 + 1$$

$$3 = 1 \times 3 + 0$$

$$\text{Gcd}(125, 793) = 1$$

B

$$1 = 1 \times 4 - 1 \times 3$$

$$1 = 1 \times 4 - (39 - 9 \times 4)$$

$$1 = 10 \times 4 - 1 \times 39$$

$$1 = 10 \times (43 - 39) - 1 \times 39$$

$$1 = 10 \times 43 - 11 \times 39$$

$$1 = 10 \times 43 - 11 \times (125 - 2 \times 43)$$

$$1 = 10 \times 43 - 11 \times 125 + 22 \times 43 \quad 1 = 32 \times 43 - 11 \times 125$$

$$1 = 32 \times (793 - 6 \times 125) - 11 \times 125$$

$$1 = 32 \times 793 - 192 \times 125 - 11 \times 125$$

$$1 = 32 \times 793 - 203 \times 125$$

$$M = -203$$

$$N = 32$$

2

$$\text{GCD}(a, b) \mid a$$

$$\text{GCD}(a, b) \mid b$$

$$A \mid \text{lcm}(a, b)$$

$$B \mid \text{lcm}(a, b)$$

$$\text{GCD}(a, b) * n = a$$

$$A * m = \text{lcm}(a, b)$$

$$\text{GCD}(a, b) * mn = \text{lcm}(a, b)$$

$Mn = \text{integer}$

B

$$d * n = a$$

$$d * m = b$$

3

$$270 = 2 * 135$$

$$135 = 5 * 27$$

$$27 = 3 * 9$$

$$9 = 3 * 3$$

$$270 = 2 * 5 * 3 * 3 * 3$$

$$= 2 * 3^3 * 5$$

B

Number of divisors = $2 * 4 * 2 = 16$

1. 135
2. 27
3. 9
4. 3
5. 2
6. 5
7. 3
8. 1
9. 270
10. 6
11. 10
12. 18
13. 54
14. 15
15. 45
16. 90

C

$$225 = 5 * 45$$

$$45 = 9 * 5$$

$$9 = 3 * 3$$

$$225 = 3^2 * 5^2$$

$$\text{Gcd}(270, 225) = 3 * 3 * 5 = 45$$

$$\text{Lcm}(270, 225) = 2 * 3^3 * 5^2 = 1350$$