

Express  $(6996, 38160)$  as the linear combination of 6996 and 38160.

$$(6996, 38160) = 6996a + 38160b$$

← ①

$$38160 = 5 \cdot 6996 + 3180$$

$$3180 = 38160 - 5 \cdot 6996$$

$$6996 = 2 \cdot 3180 + 636$$

$$636 = 6996 - 2 \cdot 3180$$

$$3180 = 5 \cdot \underbrace{636} + 0$$

$$= 6996 - 2(38160 - 5 \cdot 6996)$$

$$= 11 \cdot 6996 - 2 \cdot 38160$$

$$(6996, 38160) = 636$$

$$636 = 6996 \cdot 11 - 38160 \cdot 2$$