

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

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

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

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

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

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

$$3180 = 5 \cdot 636 \quad \text{+ 0}$$

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

$$= (1 \cdot 6996 - 2 \cdot 38160)$$

$$(6996, 38160) = 636$$

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