

3.2
Common Factors

$\frac{3.a}{220}$

$$12 \longrightarrow 12, 24, 36, \textcircled{48}, 60, \dots$$

$$16 \longrightarrow 16, 32, \textcircled{48}, 64, \dots$$

LCM = Least Common Multiple = 48

$\frac{4.e}{220}$

$$14p^4q^5 = \textcircled{1} 2, 7, 14, p, p^2, \textcircled{p^3}, p^4, q, q^2, \textcircled{q^3}, q^4, q^5$$

$$-24p^5q^4 = -1, \textcircled{1} 2, 3, 4, 6, 8, 12, 24, p, p^2, \textcircled{p^3}, p^4, p^5, q, q^2, \textcircled{q^3}, q^4$$

$$7p^3q^3 = \textcircled{1} 7, p, p^2, \textcircled{p^3}, q, q^2, \textcircled{q^3}$$

$$\text{GCF} = \text{Greatest Common Factor} = (1)(p^3)(q^3) = p^3q^3$$

$\frac{5.d}{221}$

Method I

$$6a^3b - 18ab^2$$

$$= 6ab(a^2 - 3b)$$

Method II

$$6a^3b - 18ab^2 = (a) + (b)$$

$$= \underline{(2)} \underline{(3)} \underline{(a)} \underline{(a)} \underline{(a)} \underline{(b)} - \underline{(3)} \underline{(3)} \underline{(2)} \underline{(a)} \underline{(b)} \underline{(b)}$$

$$= (2)(3)(a)(b) \left((a)(a) - (3)(b) \right)$$

$$= 6ab(a^2 - 3b)$$

Common Factors

7b
221

$$5a(a-4) - 2(a-4)$$

As $(a-4)$ is common in both the terms,
it can be factored out.

$$\therefore 5a(a-4) - 2(a-4) = (a-4)(5a-2)$$

7e
221

$$\underbrace{2y^4 + y^3} - \underbrace{10y - 5}$$

$$= y^3(2y+1) - 5(2y+1)$$

$$= (2y+1)(y^3-5)$$

{ Group the first two terms separately
and last two terms separately

{ Take the GCF out from the first
two terms separately and the
last two terms separately

{ $(2y+1)$ is common in both
the terms -- factor it out