

# The Distributive Property: Combining Like Terms

$$a(a+b) \quad a(a) + a(b) \\ a^2 + ab$$

$$\text{Ex 1: } -4a(c+5) \\ -4a(c) + (-4a)(5) \\ \boxed{-4ac + (-20a)}$$

$$\text{Ex 2: } -5(4c+6) \\ -5(4c) + -5(6) \\ \boxed{-20c + (-30)}$$

$$\text{Ex 3: } -6m(-3m+8) \\ -6m(-3m) + (-6m)(8) \\ \boxed{18m^2 + 48m}$$

$$\text{Ex 4: } \frac{1}{2}a^2(16a + (-30)) \\ \frac{1}{2}a^2(16a) + \frac{1}{2}a^2(-30) \\ \boxed{8a^3 + (-15a^2)}$$

$$\frac{a \cdot a \cdot a}{a^3}$$

$$\text{Ex 5: } 5c(31 + (-4c)) \\ 5c(31) + 5c(-4c) \\ 155c + (-20c^2) \\ \boxed{-20c^2 + 155c}$$

$$\text{EX 6: } 4m - 3(4a + 5) - 6$$

$$4m + (-3)(4a + 5) + (-6)$$

$$4m + (-3)(4a) + (-3)(5) + (-6)$$

$$4m + (-12a) + (-15) + (-6)$$

$$\boxed{(-12a) + 4m + (-21)}$$

$$\text{EX 7.) } 14 - 1(2y + 5)$$

$$14 + (-1)(2y) + (-1)(5)$$

$$14 + (-2y) + (-5)$$

$$\boxed{(-2y) + 9} \rightarrow -2y + 9$$

$$\text{EX 8: } 21 - 5m(4m - 3)$$

$$21 + (-5m)(4m + (-3))$$

$$21 + (-5m)(4m) + (-5m)(-3)$$

$$21 + (-20m^2) + 15m$$

$$\boxed{-20m^2 + 15m + 21}$$