1. Monopoly

$q = 1/2 * (a-c)/b$ Firm 1 = Firm 2 = 1/4 (a-c)/b
(two firms = perfect collusion)

$p = (a+c)/2$

$\pi = 1/4 (a-c)^2/b$ Firm 1 = Firm 2 = 1/8 (a-c)²/b

$CS = 1/8 (a-c)^2/b$ (*lets us calculate total surplus CS + PS = π+CS*)

Total = 3/8 (a-c)²/b   **DWL = 1/8 (a-c)²/b**

2. Cournot

$q = 2/3 (a-c)/b$ total   Firm 1 = Firm 2 = 1/3 (a-c)/b

$p = (2c + a)/3$

$\pi = 2/9 (a-c)^2/b$ total   Firm 1 = Firm 2 = 1/9 (a-c)²/b

$CS = 2/9 (a-c)^2/b$

Total = 4/9 (a-c)²/b   **DWL = 1/18 (a-c)²/b**

3. Stackelberg

$q = 3/4 (a-c)/b$ Firm 1 = 1/2 (a-c)/b
Firm 2 = 1/4 (a-c)/b

$p = (3c + a)/4$

$\pi = 3/16 (a-c)^2/b$ Firm 1 = 1/8 (a-c)²/b
Firm 2 = 1/16 (a-c)²/b

$CS = 9/32 (a-c)^2/b$

Total = 15/32 (a-c)²/b   **DWL = 1/32 (a-c)²/b**

4. Bertrand
(same as perfect competition)

$q = (a-c)/b$ Firm 1 = Firm 2 = 1/2 (a-c)/b

$p = c$

$\pi = 0$ Firm 1 = Firm 2 = 0

$CS = 1/2 (a-c)^2/b$

Total = 1/2 (a-c)²/b   **DWL = 0**