What is Consumer Surplus?

Worksheet

Consumer surplus is the difference between maximum willingness-to-pay and actual price paid, summed across all units: CS = (Max WTP − Price) × Quantity.

$$CS = (\text{Max WTP} - P) \times Q$$

CS = Consumer Surplus (currency)
Max WTP = Maximum willingness to pay (currency/unit)
P = Actual market price (currency/unit)
Q = Quantity purchased (units)

Questions

1. Max WTP = 50, market price =30, quantity = 2. Consumer surplus?
A) $20
B) $40
C) $60
D) $80

2. Price rises from 8 to12. Quantity stays same. CS...
A) increases
B) decreases
C) stays same
D) becomes negative

3. A video game selling at 40 when you'd pay80. Surplus per game?
A) $40
B) $120
C) $80
D) $20

4. If market price equals max WTP, consumer surplus is...
A) zero
B) negative
C) highest
D) equal to price

5. Sarah is willing to pay up to 15 per pizza. The market price is8. She buys 3 pizzas. Consumer surplus?

6. A buyer willing to pay 50 for a coat buys it at30. Surplus for 1 coat?

7. Customers willing to pay 100/month for Netflix, actual cost10. 1000 customers subscribe. Total consumer surplus?

8. Define: What is consumer surplus?

9. Define: Formula for consumer surplus?

10. Define: Does consumer surplus decrease if price rises?

Answer Key

1. B) \$40 — CS = (50−30)×2 = 20×2 = \$40.
2. B) decreases — Higher price = smaller gap from WTP = lower CS.
3. A) \$40 — CS = 80−40 = \$40.
4. A) zero — No gap = no surplus.
5. CS = (Max WTP − Price) × Quantity CS = (15 − 8) × 3 CS = 7 × 3 = \$21
6. CS = (50 − 30) × 1 CS = 20 × 1 = \$20
7. CS = (100 − 10) × 1000 CS = 90 × 1000 = \$90,000
8. Benefit from paying less than your max willingness-to-pay.
9. CS = (Max WTP − Price) × Quantity
10. Yes — less gap between WTP and price means less surplus.