Assume the following values for Figures 5.4 A .and 5.4 B. *Q*1 =20 BAGS. *Q*2 =15 BAGS. *Q*3 =27 BAGS. The market equilibrium price is $45 per bag. The price at *A* is $85 per bag. The price at *C* is $5 per bag. The price at *F* is $59 per bag. The price at *G* is $31 per bag. Apply the formula for the area of triangle (Area=1/2 x Base x Height) to answer the following questions.

1. What is the dollar value of the total surplus (producer surplus plus consumer surplus) when the allocatively efficient output level is being produced? How large is the dollar value of the consumer surplus at the output level?
2. What is the dollar value of the deadweight loss when output level Q2 is being produced? What is the total surplus when output level *Q*2 being produced?
3. What is the dollar value of the deadweight loss when level Q3 is being produced? What is the dollar value of the total surplus when out level *Q3* isproduced?

Figure 5.4

Efficiency losses (or deadweight losses). Quantity levels either less than or greater than the efficient Q1 create efficiency losses. In (a), triangle *dbe* shows the efficiency loss associated with underproduction at Q2. Triangle *bfg* in (b) illustrates the efficiency loss associated with overproduction at output level Q3.

### Figure A

  ***Efficiency loss from underproduction***

 ***A S***

 **D**

###  B

 **E**

**C D**

Price (per bag)

 0 Q2 Q1

Quantity (bags)

 A Efficiency loss from overproduction

S

###  F

 *B*

###

 G

####  C

####  D

###

Figure B

Price (per bag)

 O Q1  Q3

 Quantity (bags)