24.6

 [Figure 24.6 goes here]

In the diagram the untaxed monopoly produces *QM* at a price of *PM*. If the marginal social cost is given by *MC', QM* is, in fact, the optimal production level. A per-unit tax of t would cause the monopoly to produce output *QR* which is below the optimal level. Since a tax will always cause such an output restriction, the tax may improve matters only if the optimal output is less than *QM*, and even then, in many cases it will not.

24.9 a. The solution here requires some assumption about how individuals form their expectations about what will be purchased by others. If each assumes he or she can be a free rider, *P* will be zero as will be each person's utility.

b. Taking total differential of production possibility frontier.

2*G dG* + 200*P dP* = 0 gives



Individual 

For efficiency require sum of *MRS* should equal *RPT*

**

Using production possibility frontier yields

200*P*2 = 5000

  *P* = 5

 *G* = 50 *G*/100 = 0.5

Utility = .

Ratio of per-unit tax share of *P* to the market price of *G* should be equal to the



9.4 a. Premium = (.8)(.5)(1,000) + (.2)(.5)(1,000) = 500

b. For blue without insurance

*E(U)* = .8 ln 9,000 + .2 ln 10,000 = 9.1261.

With insurance

*E(U)* = ln (9,500) = 9.1590.

Will buy insurance.

For brown without insurance

*E(U)* = .2 ln (9,000) + .8 ln (10,000) = 9.1893.

Better off without insurance.

c. Since only blue buy insurance, fair premium is 800.

Still pays this group to buy insurance.

[*E(U)* = 9.1269]

Brown will still opt for no insurance.

d. Blue premium = 800 *E(U)* = 9.1269

Brown premium = 200 *E(U)* = 9.1901

So Brown is better off under a policy that allows separate rate setting.