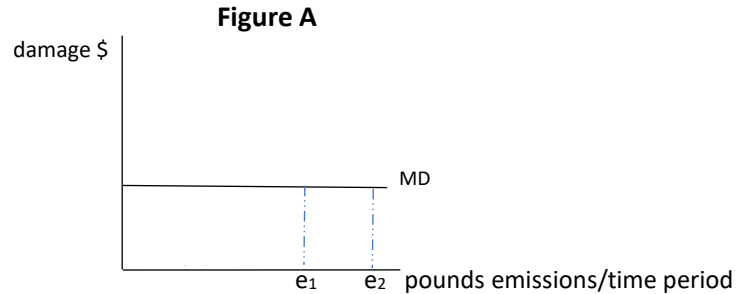
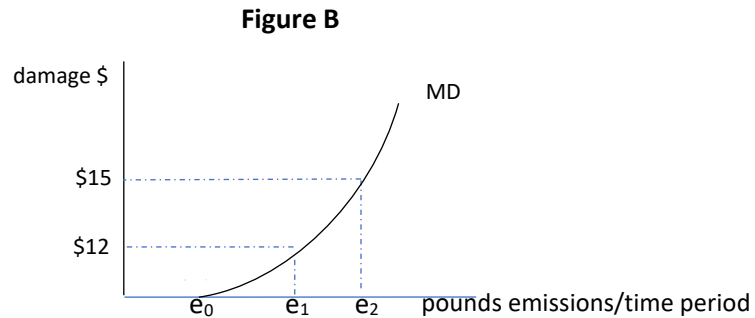


A Model of Pollution Control

1. What is the tradeoff society faces in reducing environmental damage?
2. What does the Marginal Damage (MD) function measure?
3. What is meant by a threshold in a damage function?
4. What does the existence of a threshold indicate about the damage generated by a particular pollutant?

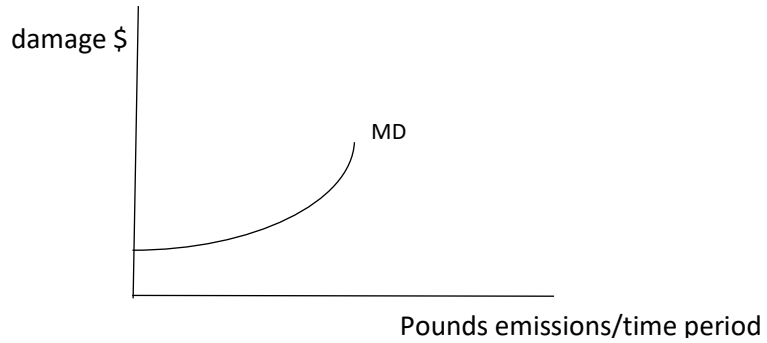


5. At what rate is total social damage changing with emissions in figure A?
6. Does the damage function in figure A have a threshold?
7. How would the total social damage caused by e_1 emissions/period be illustrated in the diagram?
8. What is counterintuitive about a horizontal damage function?



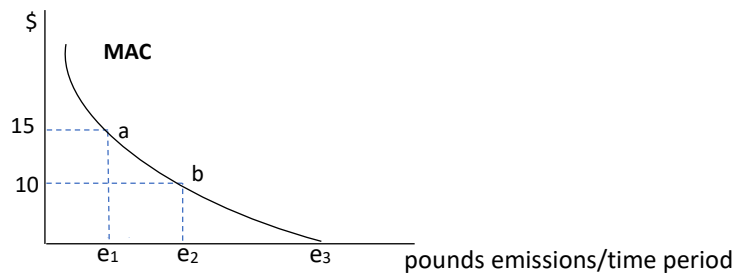
9. Does the marginal damage function in figure B have a threshold?
10. Beyond e_0 does total social damage increase with emissions?
11. Beyond e_0 does each additional pound of emissions damage society more than the previous?

Figure C



12. In Figure C does total damage increase with emissions at an increasing rate?
13. Does the damage function in figure C have a threshold?

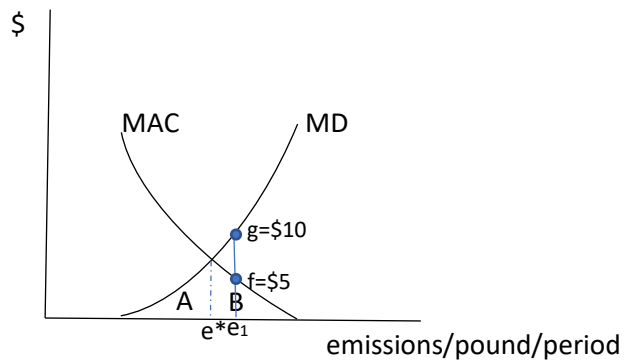
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14. What is the definition of the Marginal Abatement Cost Function (MAC)?
 15. Why should Marginal Abatement Cost (MAC) increase as emissions are further reduced?



16. If the above firm made no effort to eliminate emissions, what level of pollution would it emit?

suppose $e_1=30$, $e_2=45$, $e_3=100$

17. How much does it cost the firm to eliminate the 55th pound of emissions?
18. How much does it cost the firm to eliminate the 70th pound of emissions?
19. How would we illustrate in the diagram the total cost of eliminating 55 pounds of emissions? 70 pounds?



20. Why is e^* considered the socially efficient level of pollution?
21. Are society's net social benefits maximized at the emissions level e^* ?
22. Why isn't society's net well-being maximized at zero emissions?
23. What is the area A representing?
24. What is the area B representing?
25. Why is $A+B$ called the total social cost of emissions?
26. At the efficient level e^* what do we know about the total social cost of emissions?
27. Do the two area, A and B, have to equal one another at the efficient emissions level?
28. Why is e_1 not considered socially efficient?
29. What information is needed to calculate the MD curve?
30. What information is needed to calculate the MAC curve?