American Airlines leases a 300-seat carrier to fly its daily Dallas-Denver route. It recently lowered its ticket price from $240 to $200, and observed the following demand for seats by business and tourist-class passengers:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Price | **Q (business**) | **Q (tourists)**  | **Q(total)** | **Revenue (business)** | **Revenue (tourists)** | **Revenue (total)** |
| 240 | 90 | 10 |  |  |  |  |
| 200 | 130 | 50 |  |  |  |  |

The daily fixed costs of leasing aircrafts are as follows:

|  |  |
| --- | --- |
| 300 seats  | **$32,000** |
| 260 seats | $28,000 |
| 180 seats | $20,000 |

American’s service cost is $20 per passenger, regardless of the aircraft used.

1. How many passengers should American seek to carry on each flight to maximize

(i) its revenues?

(ii) its profits?

2. What prices should American charge if it is restricted to leasing 180-seat aircraft only?

3. What is the maximum profit will it make under the conditions in (2) above?