

PPF

Name

Imagine a small economy that produces only two goods: Robots and Cars. This economy has limited resources and technology that allow it to produce the following combinations of Robots and Cars in a given period:

- 10 Robots and 0 Cars
- 8 Robots and 2 Cars
- 5 Robots and 4 Cars
- 2 Robots and 5 Cars
- 0 Robots and 6 Cars

Your tasks:

A. Graph the Production Possibility Frontier (PPF) for this economy using the given combinations.

- Label the X-axis as "Cars" and the Y-axis as "Robots".
- Plot the points for each combination on the graph and connect them to form the PPF.

B. Answer the following questions based on the PPF:

1. What does the PPF illustrate about the concept of opportunity cost?
2. If the economy is producing 3 Robots and 4 Cars, is it operating inside, on, or outside the PPF? Why?
3. How would an improvement in technology for producing Robots shift the PPF? Illustrate this change on your graph.
4. Explain why the PPF might be bowed outwards (concave) from the origin. What does this shape indicate about the opportunity cost of producing more of one good?

Guidelines for Graphing:

When graphing the PPF, each point represents a possible combination of the two goods that the economy can produce using all its resources efficiently. The curve demonstrates the trade-offs and opportunity costs associated with allocating resources between the production of the two goods. Points inside the curve represent inefficient use of resources, points on the curve represent efficient use, and points outside the curve are unattainable with the current resources and technology.

Sample Answers:

1. The PPF illustrates that to produce more of one good (e.g., Cars), the economy must produce less of the other good (Robots), showing the trade-off and opportunity cost of choosing one option over the other.
2. This scenario is not explicitly listed in the given combinations, suggesting it might be a point inside the PPF, indicating underutilization of resources or inefficiency because the economy could potentially produce more of one or both goods without sacrificing the other.
3. An improvement in technology for producing Robots would allow the economy to produce more Robots without sacrificing the production of Cars. This would shift the PPF outward, especially along the Robots axis, indicating a higher maximum potential production of Robots.
4. The PPF is bowed outwards because the opportunity cost of producing additional units of a good increases as more of that good is produced. This increasing opportunity cost results from resources not being equally efficient in producing all goods, so reallocating resources to produce more of one good has an increasingly higher cost in terms of foregone production of the other good.