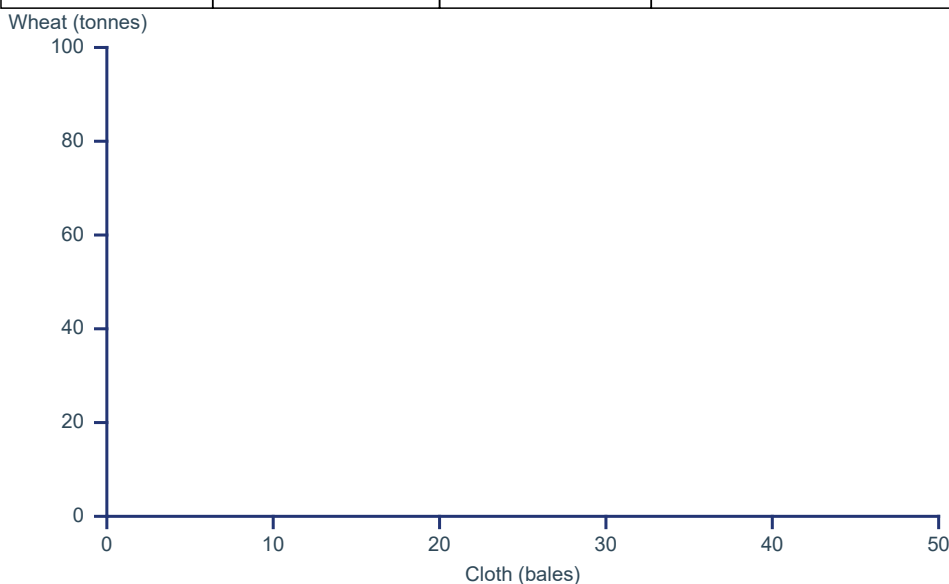


The production possibility curve: worksheet with answers

1. Plot the schedule and complete the opportunity-cost column

An economy produces wheat and cloth. Cloth on the horizontal axis, wheat on the vertical.

Combination	Wheat (tonnes)	Cloth (bales)	Opportunity cost of each extra bale (tonnes of wheat)
A	100	0	
B	95	10	
C	85	20	
D	70	30	
E	50	40	
F	0	50	



2. Questions

- Why does the curve slope downward? (2 marks)
- Why is it concave to the origin? Use the column you completed. (3 marks)
- Mark the point G = (20 cloth, 70 wheat) and H = (40 cloth, 90 wheat). What does each represent? (2 marks)
- What is the marginal rate of transformation between D and E? (1 mark)
- A new weaving machine doubles cloth output at every level of wheat. Draw the new curve. (2 marks)
- Unemployment rises. Does the curve shift? Where does the economy move? (2 marks)

Answers

1. The opportunity-cost column

B: $5 \div 10 = 0.5$ tonnes per bale. C: $10 \div 10 = 1.0$. D: $15 \div 10 = 1.5$. E: $20 \div 10 = 2.0$. F: $50 \div 10 = 5.0$. The cost of each extra bale rises: increasing opportunity cost.

2.

	Model answer
(a)	Resources are limited and fully employed on the curve, so more cloth can be produced only by moving resources away from wheat; wheat falls as cloth rises, giving a negative slope.
(b)	Opportunity cost increases along the curve (0.5, 1.0, 1.5, 2.0, 5.0 tonnes per bale) because resources are not equally suited to both goods: the first bales use resources best suited to cloth, later bales use resources that were productive in wheat. The slope (MRT) rises, so the curve bows outward.
(c)	G lies inside the curve: resources unemployed or inefficiently used; more of both goods is possible. H lies outside: unattainable with current resources and technology.
(d)	20 tonnes of wheat for 10 bales: $MRT = 2$ tonnes per bale.
(e)	The cloth intercept moves from 50 to 100 and every point's cloth value doubles; the wheat intercept (100) is unchanged. The curve rotates outward along the cloth axis.
(f)	No shift: the curve shows capacity. The economy moves from a point on the curve to a point inside it.

The two sentences to memorise

Downward sloping: because resources are scarce and fully employed, more of one good means less of the other.

Concave: because of increasing marginal opportunity cost, since resources are not equally efficient in both uses, so the MRT rises along the curve.

Shifts and moves

Change	Effect
More or better resources; technology for both goods	Outward shift (growth)
Technology for one good only	Rotation outward on that axis
War, disaster, depletion	Inward shift
Unemployment or inefficiency	No shift: a point inside the curve
Choosing capital goods over consumer goods now	A faster outward shift later

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