

WORK, WELLBEING, & SCARCITY II

MPA 612: Economy, Society, and Public Policy

February 6, 2019

*Fill out your reading report
on Learning Suite*

PLAN FOR TODAY

Opportunity cost

Preferences and tradeoffs

OPPORTUNITY COST

WHY ARE YOU GOING HERE?
GAS IS TEN CENTS A GALLON CHEAPER AT
THE STATION FIVE MINUTES THAT WAY.

BECAUSE A PENNY SAVED
IS A PENNY EARNED.

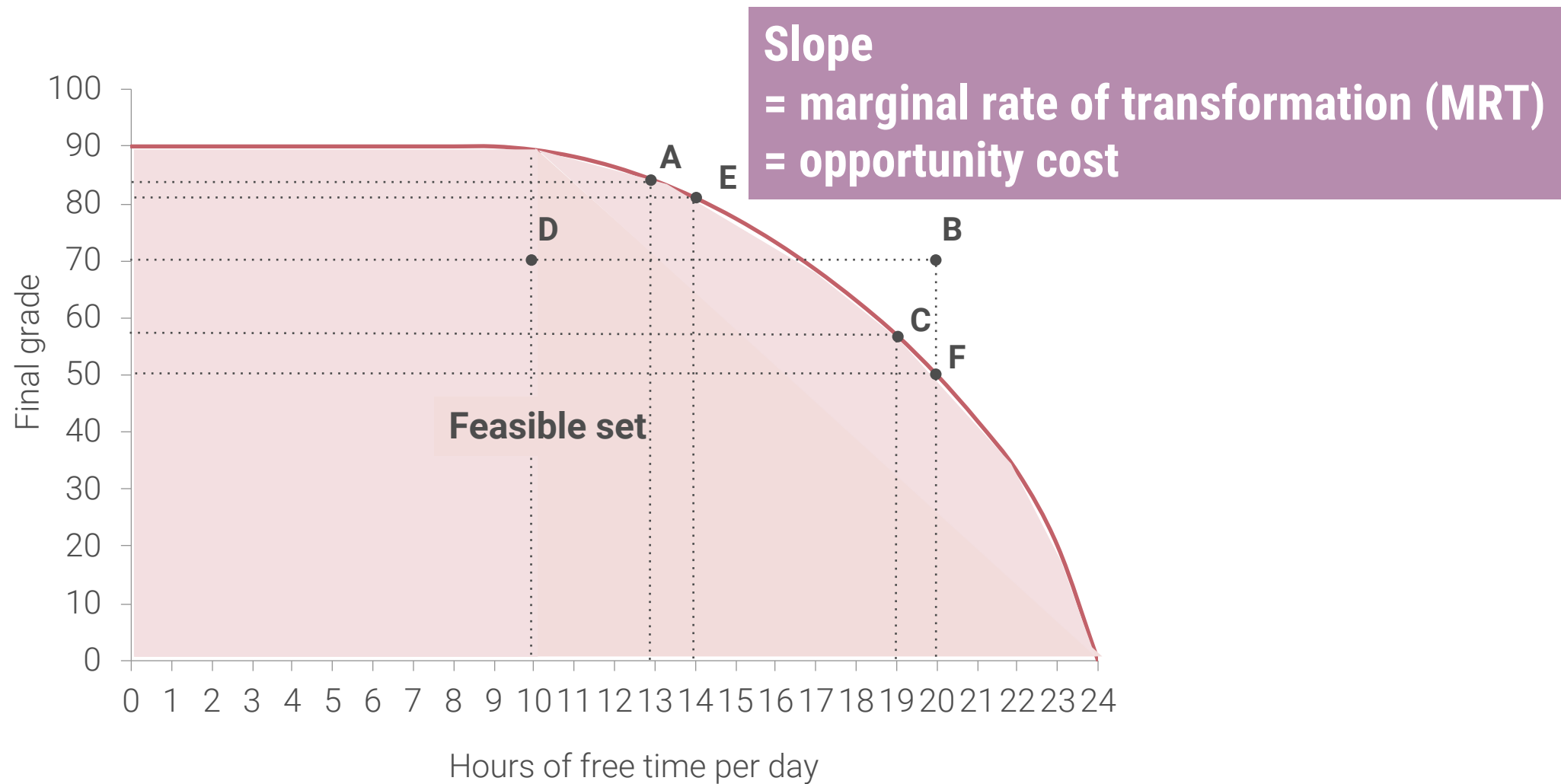


IF YOU SPEND NINE MINUTES OF YOUR
TIME TO SAVE A DOLLAR, YOU'RE WORKING
FOR LESS THAN MINIMUM WAGE.

OPPORTUNITY COST

The value of the thing you can't do because of a decision

The value of the forgone option



	A	E	C	F
Free time	13	14	19	20
Grade	84	81	57	50
Opportunity cost		3		7



OPPORTUNITY COST

Cost for
theater concert

\$25

Value of park
concert *to you*

\$15

Economic
cost of theater

\$40

Value of theater
concert *to you*

\$50

\$35

Your choice

Theater

Park

PREFERENCES & TRADEOFFS

Are We Running Out of Ideas? (Ep. 310)

November 29, 2017 @ 11:00pm

by **Stephen J. Dubner**

Produced by **Greg Rosalsky**



LISTEN NOW:



Stuck in a rut: If new ideas spread so easily, why is productivity growth slowing? (Photo: Wikimedia Commons)

Our latest Freakonomics Radio episode is called “Are We Running Out of Ideas?” (You can subscribe to the podcast at [Apple Podcasts](#) or [elsewhere](#), get the [RSS feed](#), or listen via the media player above.)

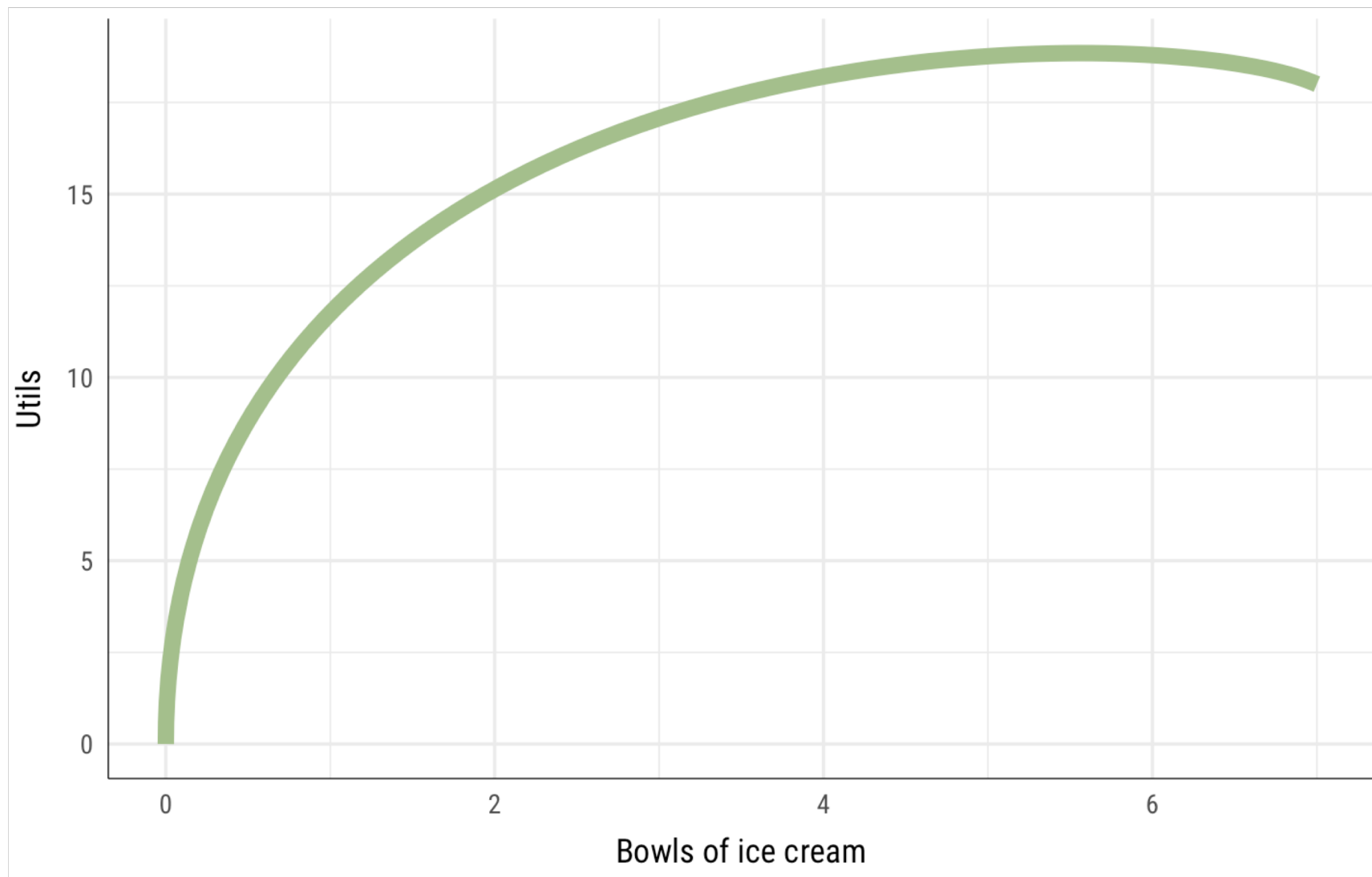
Economists have a hard time explaining why productivity growth has been shrinking. One theory: true innovation has gotten much harder – and much more expensive. So what should we do next?

UTILITY

Happiness points



Diminishing marginal utility



UTILITY BUNDLES

**Theoretical combination of goods
that provide same level of utility**

$$u(x_1, x_2)$$

$$u(x_1, x_2) = x_1 x_2$$

UTILITY BUNDLES

$$u(x_1, x_2) = x_1 x_2$$

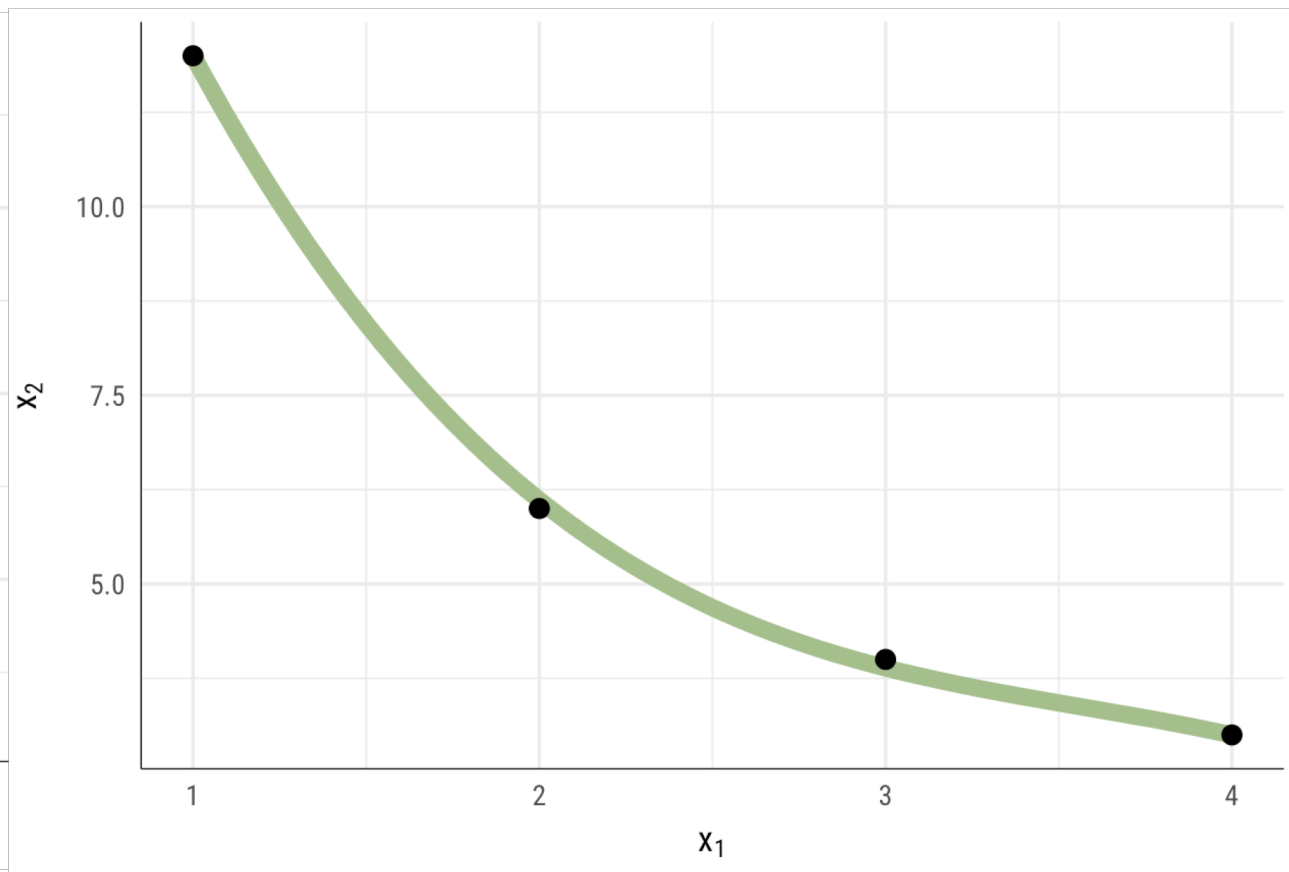
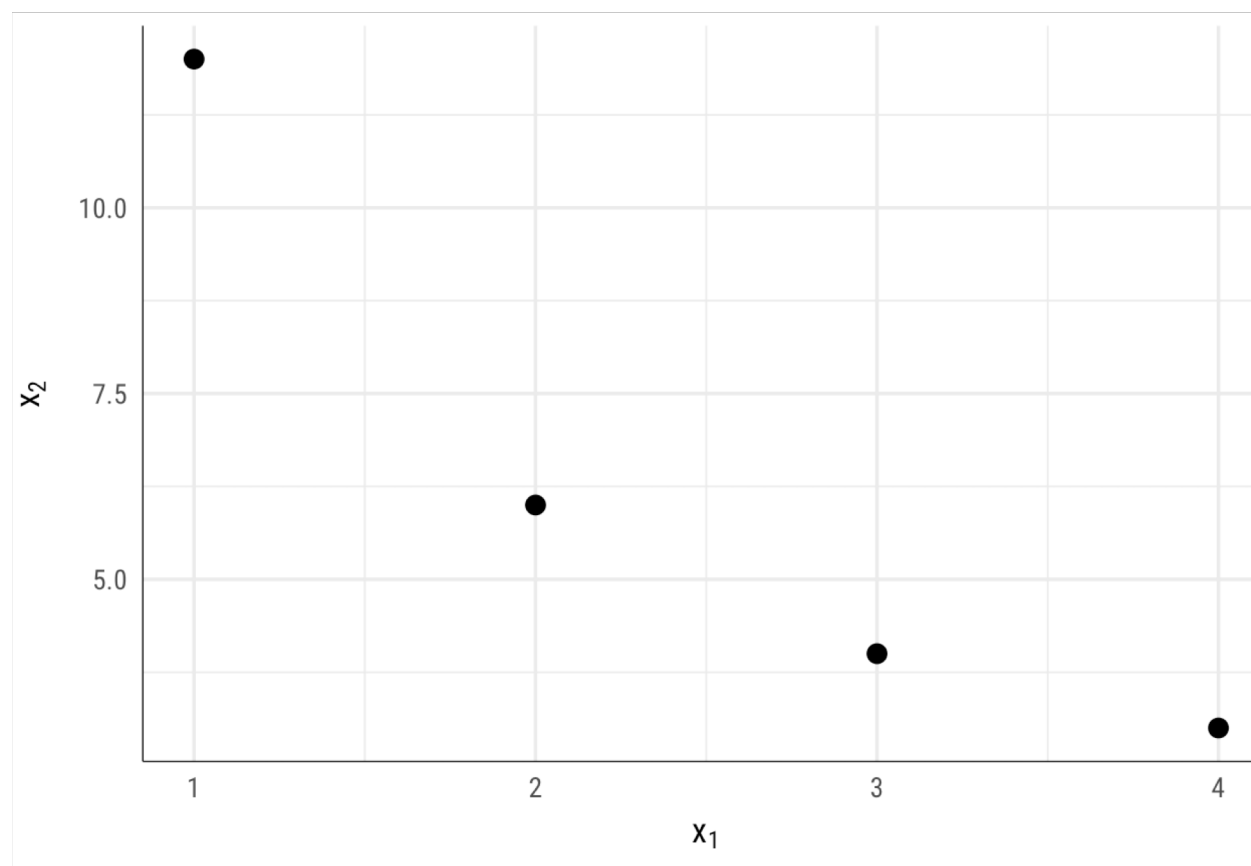
$$u(1, 2) \quad \mathbf{2}$$

$$u(100, 3) \quad \mathbf{300}$$

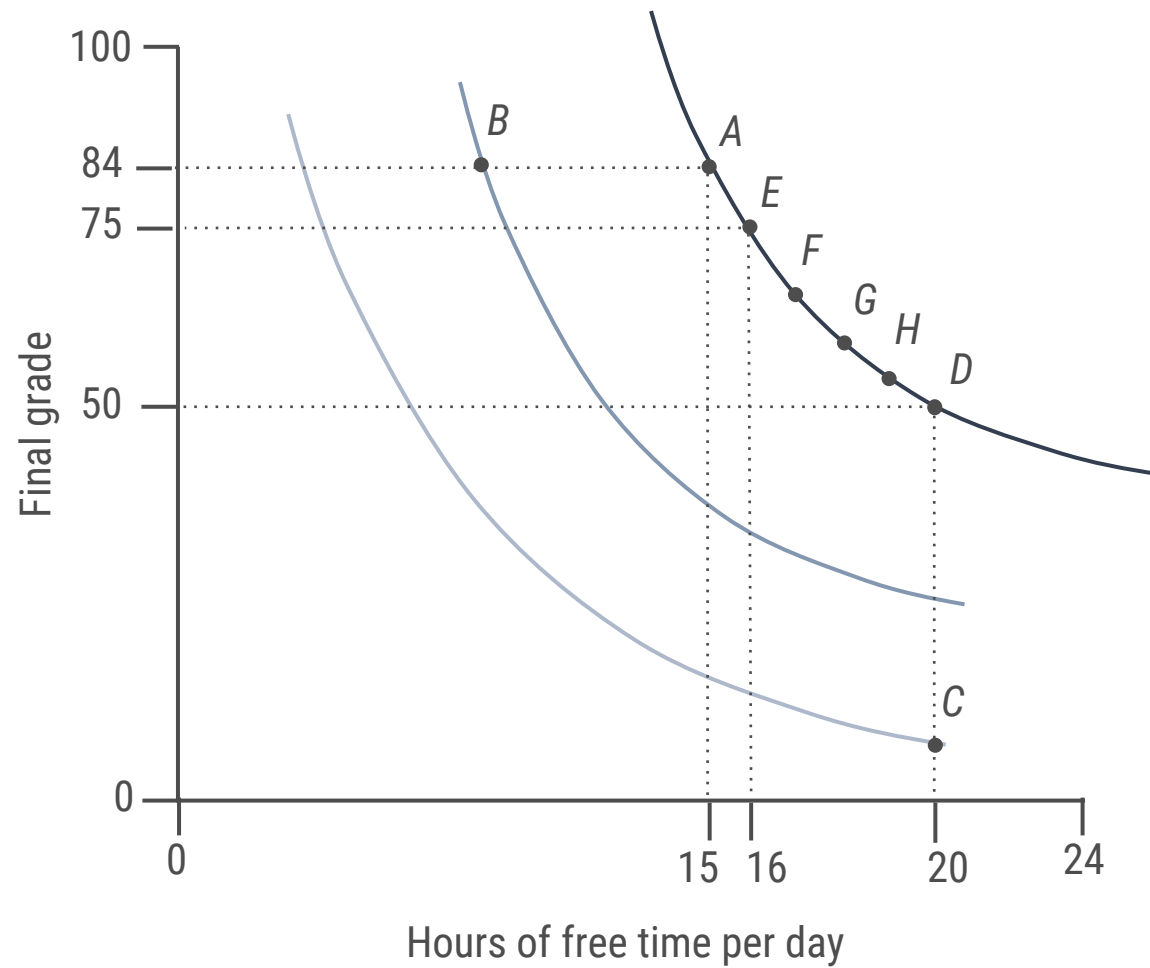
$$u(4, 1) \quad \mathbf{4}$$

What combinations of inputs will produce 12 utils?

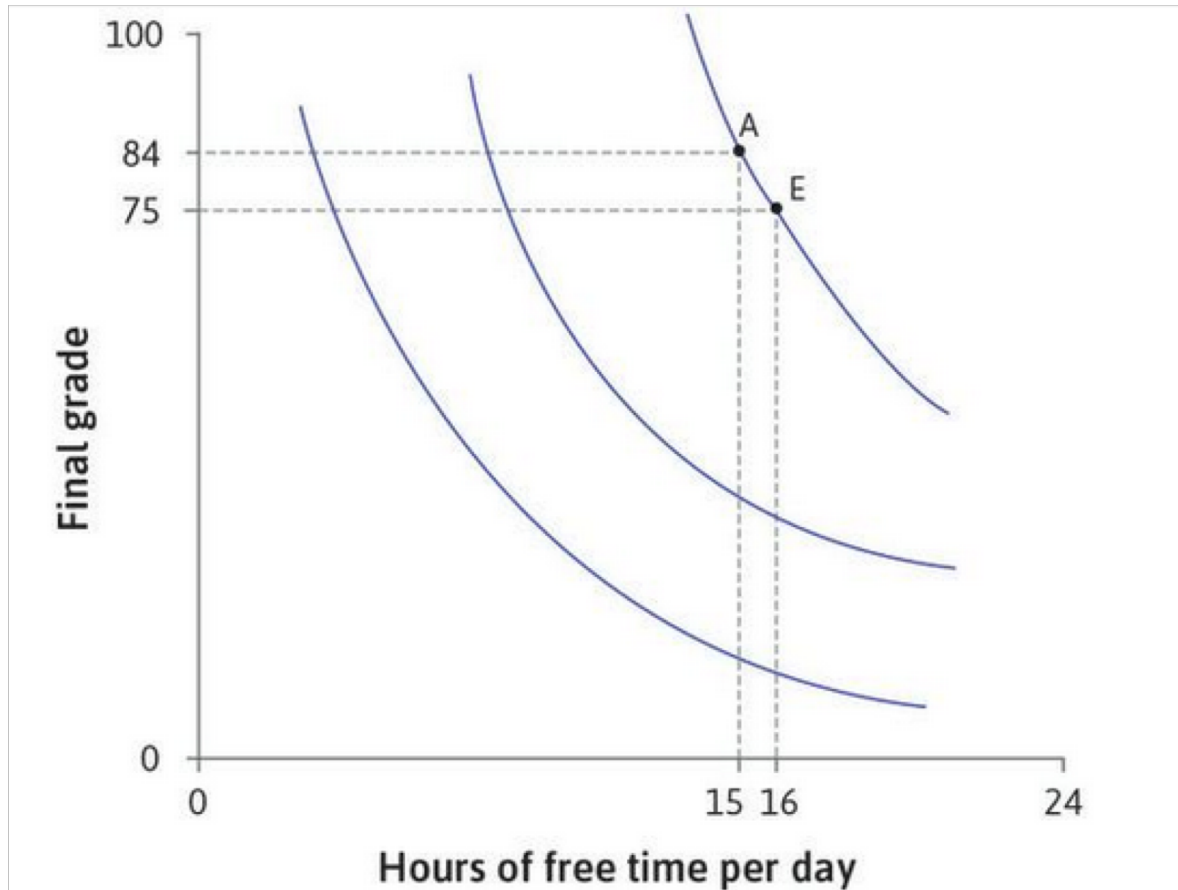
$$u(x_1, x_2) = x_1 x_2$$



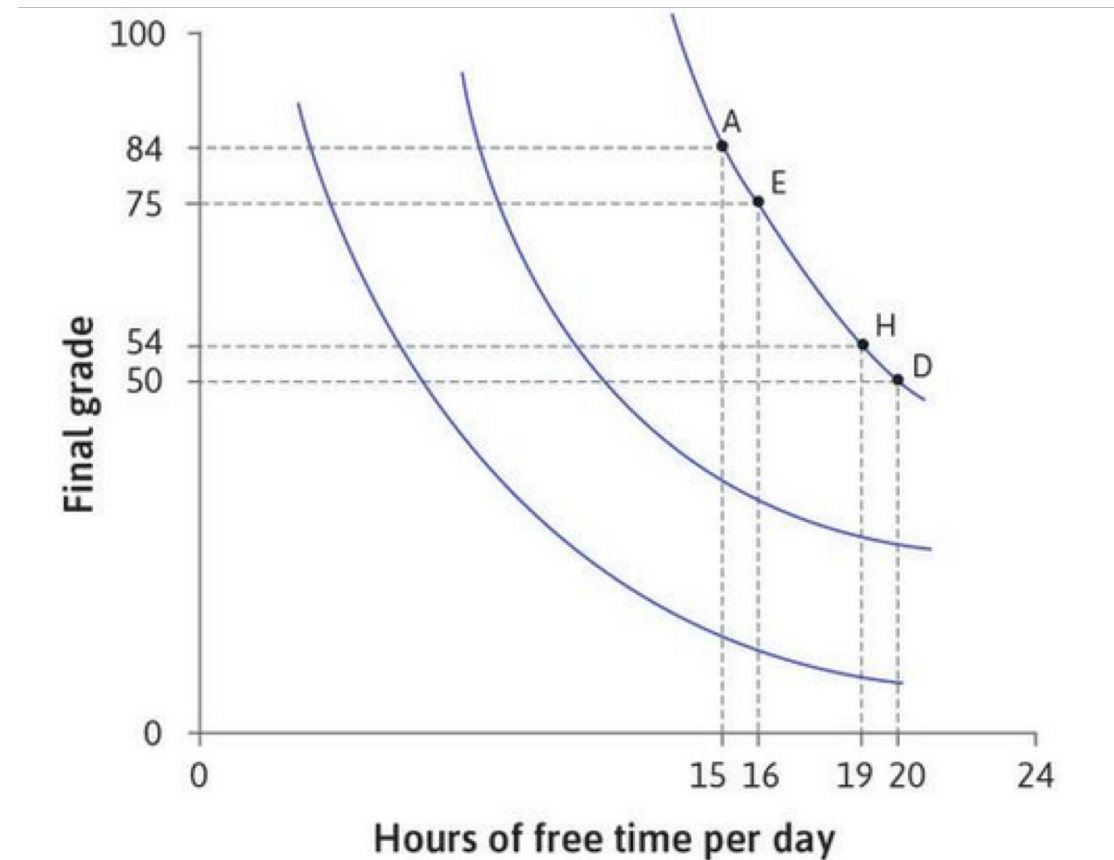
INDIFFERENCE CURVES



**Slope of indifference curve =
marginal rate of substitution (MRS)**



MRS at A = 9



MRS at H = 4

INDIFFERENCE CURVES

$$u = xy$$

$$u = \sqrt{xy}$$

$$u = x^2y^2$$

$$u = x^2y$$

Marginal rate of substitution (MRS)

Theoretical tradeoff between inputs

Slope of indifference curve

$$MRS = \frac{dy}{dx} = \frac{\Delta y}{\Delta x} = \frac{P_x}{P_y} = \frac{MU_x}{MU_y} = \frac{\partial u / \partial x}{\partial u / \partial y}$$

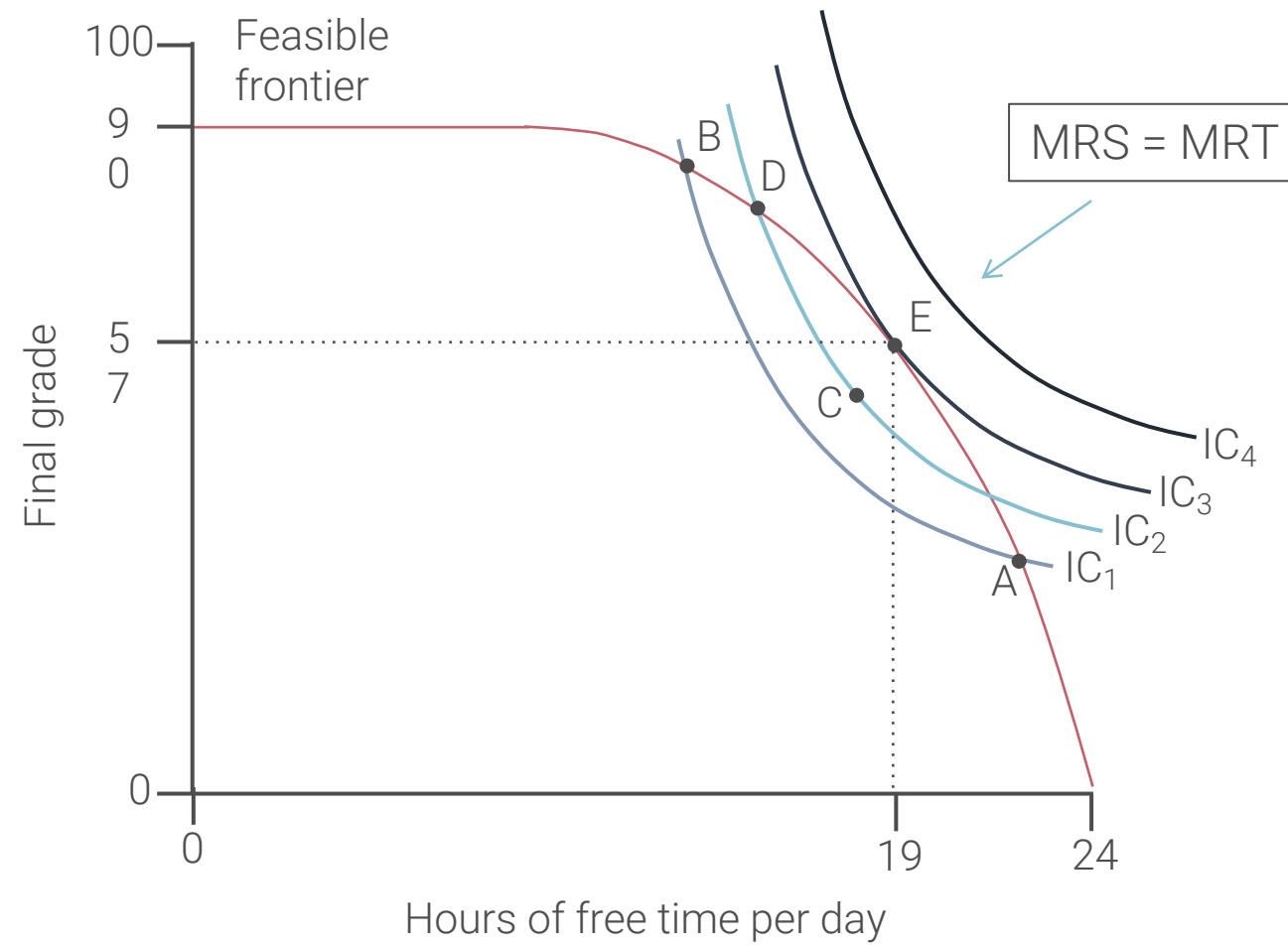
Marginal rate of transformation (MRT)

Actual tradeoff between inputs
constrained by feasible frontier

Slope of feasible frontier

**What's the best number of
workers to use / planes to make?**

**What's the best combination of
hours studied / free time?**





UTILITY MAXIMIZATION

0. Plot indifference curve

1. Figure out feasible set or MRT
(budget line)

2. Use calculus and prices to figure out ideal MRS

$$(\Delta y / \Delta x = \text{price } x / \text{price } y = MU_x / MU_y)$$

3. MRT = MRS and solve for x and y

Waffles (x)

\$1

Calzones (y)

\$2

Utility

$$u = xy$$

Budget

\$20