



LESSON 25

MA 16100 · FALL 2022

DR. HOOD



WARM UP

Let $x + y = 10$. Which of the following choices of x and y has the largest product xy ?

a) $x = 1$ and $y = 9$

b) $x = 2$ and $y = 8$

c) $x = 4$ and $y = 6$

Q: Is there a better choice of x and y ?

Q: Is there a better method?

ANNOUNCEMENTS

- Dr. Hood's Office Hours in Math 844
 - Mon and Wed at 3:30-4:30pm
 - Friday at 2:30-3:30pm
- TA's Office Hours in the [Math Resource Room](#)
 - WTHR 313
 - Mon – Thu from 9:30am – 8:30pm
 - Fri from 9:30am – 3:30pm

POLL 1

$$P'(x) = 0$$

Find the critical points of $P = x(10 - x)$

$$P(x) = 10x - x^2$$

a) $x = 0$ and $x = 10$

$$P'(x) = 10 - 2x = 0$$

b) $x = 5$

$$x = 5$$

c) $x = 6$

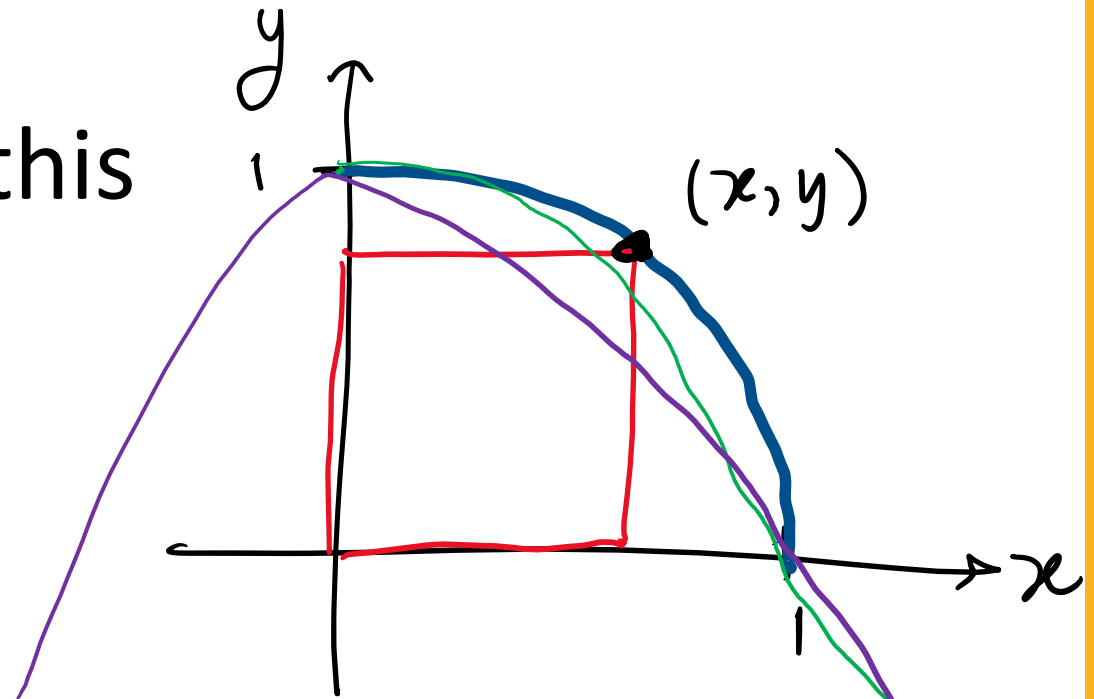
POLL 2

What is the constraint for this optimization problem?

→ a) $y = \cos\left(\frac{2x}{\pi}\right)$

b) $x^2 + y^2 = 1$

→ c) $y = 1 - x^2$



point (x, y) lies on the unit circle

$$x^2 + y^2 = 1$$