$$A = \pi r^2$$

$$r = \frac{20-4x}{2\pi}$$

$$A = \pi\left(\frac{10}{\pi} - \frac{2x}{\pi}\right)^2$$

$$r = \frac{20}{2\pi} - \frac{4x}{2\pi}$$

Area of Square

x^2

$$A = \pi\left(\frac{100-40x+4x^4}{\pi^2}\right)$$

Area of Circle

$$A = \frac{100-40x+4x^2}{\pi}$$

$$r = \frac{10}{\pi} - \frac{2x}{\pi}$$

SW

$$\left(\frac{10}{\pi} - \frac{2x}{\pi}\right)\left(\frac{10}{\pi} - \frac{2x}{\pi}\right)$$

$$A_{(x)} = x^2 + \frac{100-40x+4x^2}{\pi}$$

$$\frac{10}{\pi}\cdot\frac{10}{\pi} - \frac{10}{\pi}\cdot\frac{2x}{\pi} - \frac{2x}{\pi}\cdot\frac{10}{\pi} + \frac{2x}{\pi}\cdot\frac{2x}{\pi}$$

$$\frac{100}{\pi^2} - \frac{20x}{\pi^2} - \frac{20x}{\pi^2} + \frac{4x^2}{\pi^2}$$

$$\frac{100-40x+4x^2}{\pi^2}$$

~~Area of Circle~~

$$A = \pi r^2$$

$$r = \frac{20-4x}{2\pi}$$

$$A = \pi\left(\frac{10}{\pi} - \frac{2x}{\pi}\right)^2$$

$$r = \frac{20}{2\pi} - \frac{4x}{2\pi}$$

Area of Square

$$A = \pi\left(\frac{100-40x+4x^4}{\pi^2}\right)$$

$$r = \frac{10}{\pi} - \frac{2x}{\pi}$$

$$A = \frac{100-40x+4x^2}{\pi}$$

Area of Circle

x^2

SW

$$\left(\frac{10}{\pi} - \frac{2x}{\pi}\right)\left(\frac{10}{\pi} - \frac{2x}{\pi}\right)$$

$$A_{(x)} = x^2 + \frac{100-40x+4x^2}{\pi}$$

$$\frac{10}{\pi}\cdot\frac{10}{\pi} - \frac{10}{\pi}\cdot\frac{2x}{\pi} - \frac{2x}{\pi}\cdot\frac{10}{\pi} + \frac{2x}{\pi}\cdot\frac{2x}{\pi}$$

$$\frac{100}{\pi^2} - \frac{20x}{\pi^2} - \frac{20x}{\pi^2} + \frac{4x^2}{\pi^2}$$

$$\frac{100-40x+4x^2}{\pi^2}$$

~~Area of Circle~~

- you are all important to me
- Darren Lacoste

Prof. Lacoste

23 Oct / 2019

2.7 Analyzing Graphs of Functions and Piecewise-Defined Functions

- Test for Symmetry

Consider the equation in the variable x and y:

- The graph of the equation is symmetric with respect to the y-axis if substituting -x for x in the equation results in an equivalent equation

- The graph of the equation is symmetric with respect to the x-axis if substituting -y for y in the equation results in an equivalent equation

- The graph of the equation is symmetric with respect to the origin if substituting -x for x a -y for y in the equation results in an equivalent equation

→ for every point (x, y) on the graph, the point (x, -y) is also on the graph

→ for every point (x, y) on the graph, the point (-x, -y) is also on the graph.

→ for every point (x, y) on the graph, the point (x, -y) is also on the graph.

- In math, to "replace" something with something else can be tricky. to avoid making a mistake, ~~[illegible]~~ remember CERS whenever you replace

Copy: Erase; Replace; Simplify.

→ Problems (Answer)

② $y = -3x$

Test for x ($y \to -y$)

C: $y = -3x$

E: $(\ \ ) = -3x$

R: $(-y) = -3x$

S: $\frac{-y}{-1} = \frac{-3x}{-1}$

$y = 3x$

not equivalent

NO

x-axis symmetry

Test for y ($x \to -x$)

C: $y = -3x$

E: $y = -3(\ \ )$

R: $y = -3(-x)$

S: $y = 3x$

not equivalent

NO

y-axis symmetry

Test for origin ($x \to -x$; $y \to -y$)

C: $y = -3x$

E: $(\ \ ) = -3(\ \ )$

R: $(-y) = -3(-x)$

S: $\frac{-y}{-1} = \frac{3x}{-1}$

$y = -3x$

equivalent

Yes

origin symmetry

③ $y^2 - x - 2 = 0$

Test for y ($x \to -x$)

C: $y^2 - x - 2 = 0$

E: $y^2 - (\ \ ) - 2 = 0$

R: $y^2 - (-x) - 2 = 0$

S: $y^2 + x - 2 = 0$

no y-axis symm

Test for x ($y \to -y$)

C: $y^2 - x - 2 = 0$

E: $(\ \ )^2 - x - 2 = 0$

R: $(-y)^2 - x - 2 = 0$

S: $y^2 - x - 2 = 0$

Yes x-axis symmetry

Test for origin

C: $y^2 - x - 2 = 0$

E: $(\ \ )^2 - (\ \ ) - 2 = 0$

R: $(-y)^2 - (-x) - 2 = 0$

S: $y^2 + x - 2 = 0$

No origin symmetry