WARM UP!

homework help

SOLVE for y

a). $5x-2y=8$

b). $xy+3x=2$

(31) $f(x) = x^2 - 2x - 3$

a) Find the vertex by averaging the x-int.

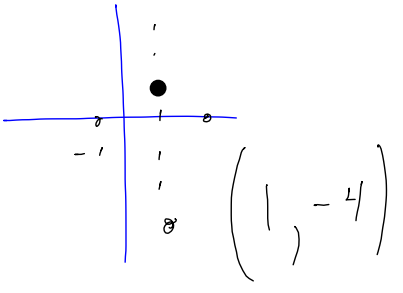
$0 = x^2 - 2x - 3$

$1 \quad -2 \quad -3$

$0 = (x-3)(x+1)$

$x = 3 \quad x = -1$

$x_{Avg} = \frac{3 + -1}{2} = \frac{2}{2} = 1$



b) by Completing the Square

$f(x) = x^2 - 2x - 3$

c) Choose

$f(x) = x^2 + 5x + 2$

$\frac{5}{2}x \cdot \frac{5x}{2}$

$f(x) + \frac{25}{4} =$

	x	$\frac{5}{2}$
x	x^2	$\frac{5}{2}x$
$\frac{5}{2}$	$\frac{5}{2}x$	$\frac{25}{4}$

$+ 2$

$f(x) + \frac{25}{4} = \left(x + \frac{5}{2}\right)^2 + 2$

BECAUSE ITS WEDNESDAY...

PLEASE PICK UP HW SOLUTIONS AT THE FRONT OF THE ROOM.

CHECK YOUR ANSWERS AND THEN WILL GO OVER ANY QUESTIONS AT THE END OF THE PERIOD.

a). $5x-2y=8$

$+2y \quad +2y$

$5x = 2y + 8$

$-8 \quad -8$

$\frac{5x-8}{2} = \frac{2y}{2}$

$y = \frac{5x-8}{2}$ $\quad y = \frac{5x}{2} - 4$

$y = \frac{5x}{2} - \frac{8}{2}$

b). $xy+3x=2$

$-3x \quad -3x$

$\frac{xy}{x} = \frac{2-3x}{x}$

$y = \frac{2-3x}{x}$

$y = \frac{2}{x} - \frac{3x}{x}$

$y = \frac{2}{x} - 3$

SOLVING BY REWRITING

strategies to solve a variety of both

equations AND **systems of equations**

Quick Note

$\frac{x}{x} = 1$

$\frac{2x}{x} = 2$

$\frac{x^2}{x} = x$

$\frac{(2-x)}{x} =$

$\frac{(2-x)}{x} = (2-x)$

when...

SOLVING BY REWRITING

given a situation → rewrite → solve

given a situation → rewrite → solve

situation

$$\frac{4}{x^2} + \frac{12}{x} + 9 = 0$$

how do we rewrite this?

$$\frac{4}{x^2}(x^2) + \frac{12}{x}(x^2) + 9(x^2) = 0(x^2)$$

$$4 + 12x + 9x^2 = 0$$

$$9x^2 + 12x + 4 = 0$$

solve $9x^2 + 12x + 4 = 0$

Possible ways to solve?

Quadratic Form

factor

$(\quad)(\quad) = 0$

$(\quad) = 0 \quad (\quad) = 0$

ZPP

given a situation → rewrite → solve

New situation

$$\frac{x-3}{x} + \frac{2}{x-1} = \frac{5-x}{x}$$

DO NOT need to solve
just rewrite

rewrite

$$\frac{x-3}{x} + \frac{2}{(x-1)} = \frac{5-x}{x}$$

$$(x-3)(x-1) + 2x = (5-x)(x-1)$$

$$x^2 - 3x - 1x + 3 + 2x = 6x - x^2 - 5$$

$$x^2 - 2x + 3 = 6x - x^2 - 5$$

$$-6x \quad +5 \quad +x^2 \quad -6x \quad +x^2 \quad +5$$

$$2x^2 - 8x + 8 = 0$$

are the functions equivalent?

$y=(x-3)(x-5)$ $y=2(x-3)(x-5)$

do they have the same

Roots ?

Roots

x-value that makes the y-value go to zero

INPUT ⟶ OUTPUT = 0

y=(x-3)(x-5)

0 = (x-3)(x-5)

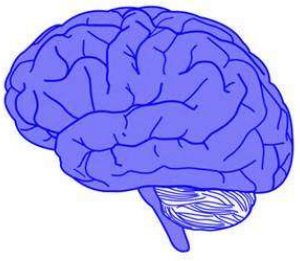
(x-3) = 0
+3

(x-5) = 0
+5 +5

x = 3
x = 5 ROOTS

y=2(X-3)(X-5)

(X-3) = 0



Brain Break!

THING

THING

in your own words,

briefly...

- state & explain 2 or 3 strategies you could use to rewrite an equation to make it easier to solve ?
- what are the possible ways we've learned to solve quadratic equations?

ASSIGNMENT:

.....41b,45-46, 49-50, 53-54

for a

do 38f as well

Learning Objective:

TSWBAT solve both equations and systems of equations by using different methods for rewriting. The student will state & explain 2 or 3 strategies used for rewriting an expression as well as explain the two ways to solve equations and systems of equations.