Warm UP in NOTES

HW Help

(A) Complete the Square using a box to convert to graphing form.

$f(x) = x^2 + 20x + 550$

(B) repeat without a box

Wait for Mr. C to Demo

$f(x) = x^2 + 20x + 550$

$\left(\frac{20}{2}\right)^2$

$f(x) + 100 =$

	x	10
x	x^2	$10x$
10	$10x$	100

$+ 550$

$f(x) + 100 = (x+10)^2 + 550$

$f(x) = (x+10)^2 + 450$ Vert $(-10, 450)$

(B) without a box

$f(x) = x^2 + 20x + 550$

$\left(\frac{b}{2}\right)^2 = \left(\frac{20}{2}\right)^2 = 100$

$f(x) = x^2 + 20x + 550$

$f(x) + 100 = x^2 + 20x + 100 + 550$

$f(x) + 100 = (x+10)^2 + 550$

$f(x) = (x+10)^2 + 550$

(C) Write an equation of a circle with a radius of 9, that has a center (7,-2)

$(0,0)$

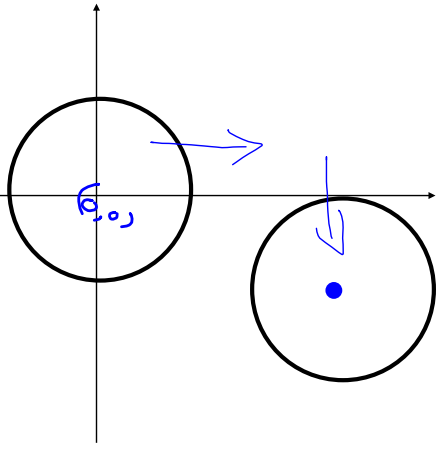
$(x)^2 + (y)^2 = 81$

$(x-7)^2 + (y+2)^2 = 81$

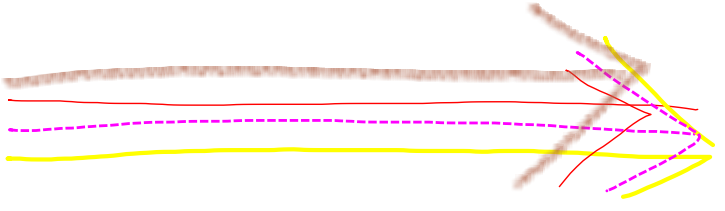
Write an equation of a circle with a radius of 9, that has a center (7,-2)

$x^2 + y^2 = 81$

$(x-7)^2 + (y+2)^2 = 81$



ONe OF our two objectives for the day :

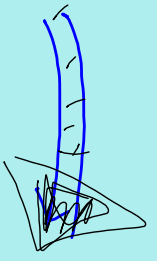


Convert an equation of a circle in non-standard form

GOAL 1

$$x^2 + y^2 - 8x + 10y = -5$$

to Standard form



$$(x-4)^2 + (y+5)^2 = 36$$

$$x^2 + y^2 - 8x + 10y = -5$$

from HW

$$x^2 - 8x + 16 + y^2 + 10y + 25 = -5 + 16 + 25$$

$$(x-4)^2 + (y+5)^2 = 36$$

$\left(\frac{16}{2}\right)^2$

$\left(\frac{-8}{2}\right)^2 = 16$ ( )^2

$\left(\frac{10}{2}\right)^2$

( )^2 + ( )^2 = 36

example 2

$x^2 + 8y + 100 + y^2 - 2x = 400$

-100 -100

$x^2 - 2x + 1 \quad y^2 + 8y + 16 = 300 + 1 + 16$

$(x-1)^2 + (y+4)^2 = 317$

$\left(\frac{-2}{2}\right)^2 = 1$

center $(1, -4)$

$r = \sqrt{317}$

Next Test: Tuesday, Nov. 11th

in 12 days from now

HW Questions

3-54 Circle

(a) center $(0,0)$

$r = 6$

$x^2 + y^2 = 36$

(b) center $(2,-3)$

$r = 6$

$(x-2)^2 + (y+3)^2 = 36$

50 $5x^3y + 35x^2y + 50xy$ NOT IN SOLUTIONS

FACTOR completely $5xy(x^2 + 7x + 10)$

$5xy(\quad)(\quad)$

45 a) $(n+4) + n(n+2) + n = 0$

$n + 4 + n^2 + 2n + n = 0$

$n^2 + 4n + 4 = 0$

b) $\frac{4}{x} = x + 3$

46 a) $(ab)^2$ a^2b^2

b) $3x - 4y = 12$
$-3x \quad -3x$

$y = \frac{3}{4}x - 3$

(c) $y = 2(x-1)+3$ $y = 2x+1$

(d) $(a+b)^2$ a^2+b^2

(e) ~~x^6~~ x^4 ~~x^2~~ 1 NOT equiv. x^3

(f) $y = 3(x-5)+2$ $y = 2x-8$

(49) a. $t(n) = 450{,}000\,(1.03)^n$

b. $t(10) = 450{,}000(1.03)^{10} = \$604{,}732.37$

604,762

762

Profit: 604732.37 − 450000.00 = $154,762.37

$\frac{154762.37}{450000} = .343916\ldots$ 34.39%!

53

$7\sqrt[4]{x^3}$

46b

$3x-4y=12$

$y=\frac{3}{4}x-3$

$$(ab)^2 = ab \cdot ab$$

$$= a \cdot a \cdot b \cdot b$$

$$= a^2 b^2$$

53

c $\sqrt[8]{17^x} \quad (17^x)^{\frac{1}{8}} = 17^{\frac{x}{8}}$

d $7 \cdot \sqrt[4]{x^3} = 7 \cdot x^{\frac{3}{4}}$

54c) $x^2 + y^2 - 8x + 10y + 5 = 0$

41

Tracing Functions in the air

Think: What does the graph of the parent look like?

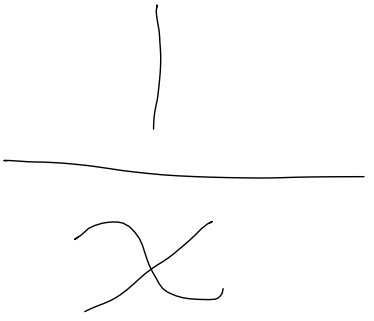
$$y = 2(x-1)^2 - 5$$

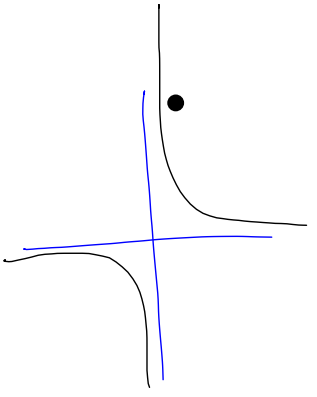
$y = 3(2)^x$

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

$y = 2x^2 - 4x + 7$

$y = \frac{1}{5}x^3 + 7$





Objective 2 for the day

Combine functions and analyze them

Some will be a new type of function

$+ \quad - \quad \times \quad \div$

Specifically Polynomial functions

What do polynomials look like?

$25x^5$

$-7x^3$

$1000n^3$

(any real #) x any positive integer

$\frac{x}{4}$

Silent Reading (5 minutes)

Quietly read through the Vocabulary Section on page 135 of your text book.

take notes on your own time later as needed.

(any real #) $x^{}$ any positive integer

or

(any real #) $x^{}$ positive integer + (any real #) $x^{}$ positive integer

$3x^2 + 17x^{80}$

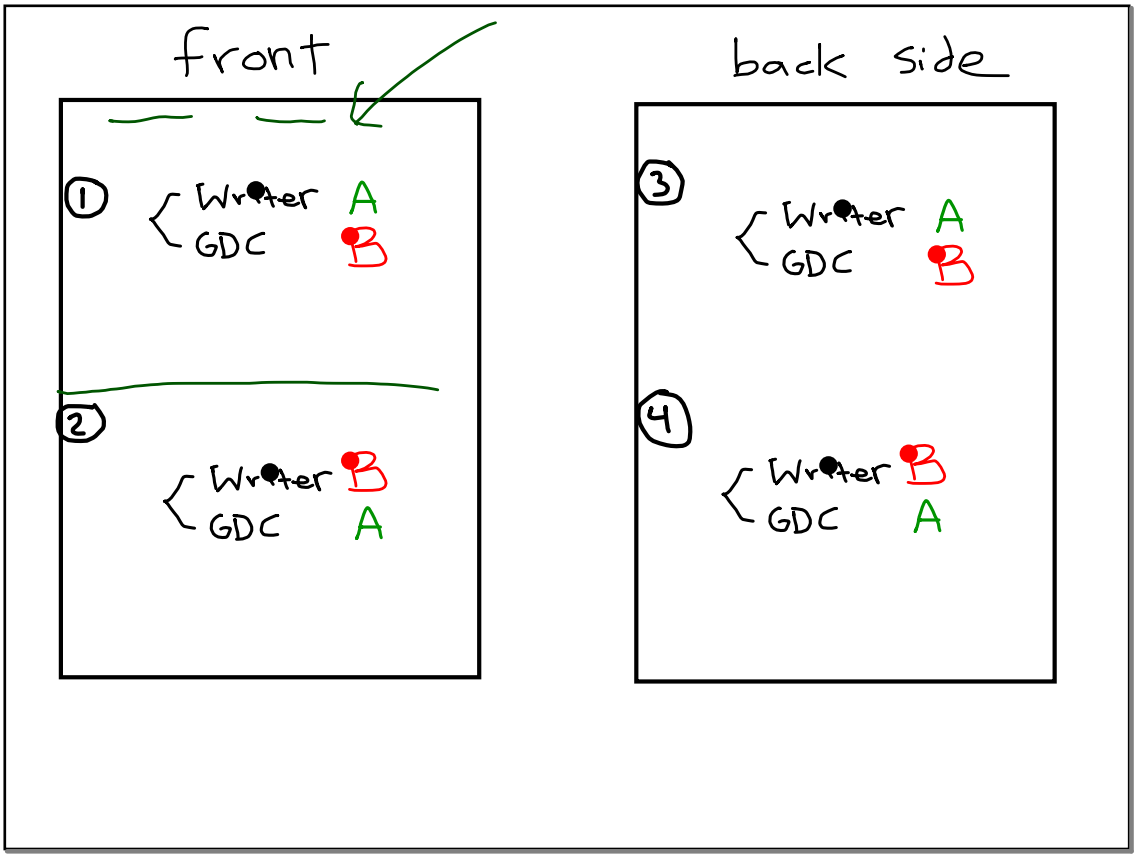
$2x^{706} + 15x^4 + 7x^5$

Need to be in pairs

each pair will investigate a different pair of functions

- Writer
- GDC

one paper per pair.



Pair #1 Person A Person B Period ____

our two functions : $f(x) = x - 2$ $g(x) = 2x + 3$

① A writes B does part c on GDC

a) Perform the operation shown (simplify if possible)

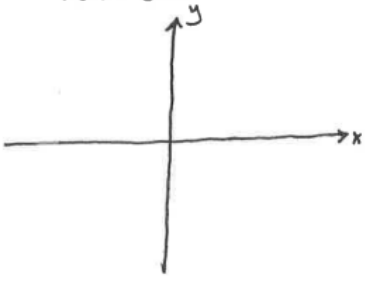
$f(x) + g(x)$

$(x-2) + (2x+3)$

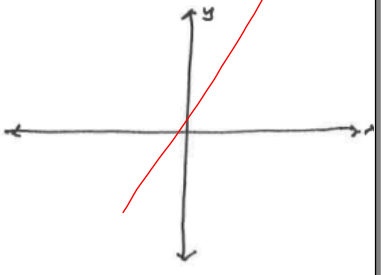
$x - 2 + 2x + 3$

$3x + 1$

b) Prediction of graph of $f(x) + g(x)$

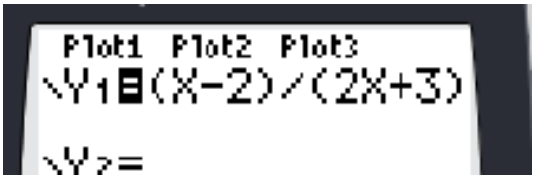


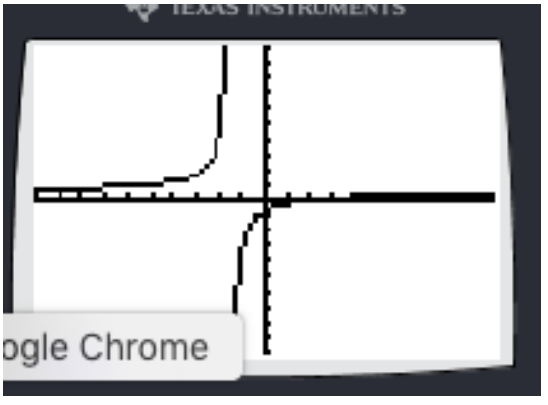
c) Person B graphs $f(x) + g(x)$ on GDC then sketch



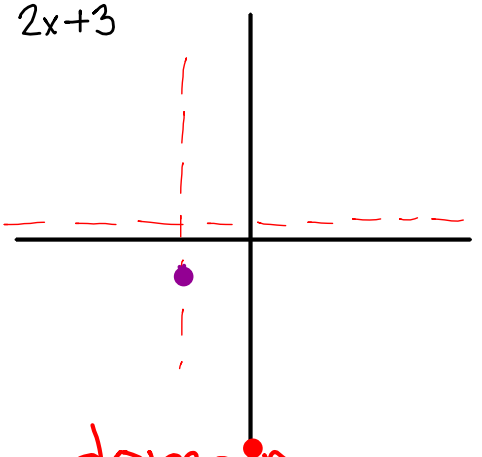
- Be organized when investigating
- You will be presenting portions of your work so be neat.
- Each pair will turn in one investigation
  -names go on top

PAIR #1





$\frac{x-2}{2x+3}$



domain

$-\infty < x < \infty,$
$x \neq -1.5$

BB

- Check your answers by referring to the Checkpoint 3A materials section of the answers.

- If you feel that you need more confidence when solving these types of problems, then review the Checkpoint 3A materials and try the practice problems provided. From this point on, you will be expected to do problems like these correctly and with confidence.

turn in your investigation

Assignment

3 ..... 63 to 69

67 is a Checkpoint problem

pdf