Please honor my request that:

Once class begins...Don't work on yesterday's HW

When we go over it, you use a pen of a different color.

Let me know
about HW
questions

Pick up
the Warm Up

WARM UP

① Factor $x^2 - 100 = (x + 10)(x - 10)$

$25 - b^2 = (5 + b)(5 - b)$

② $f(x) = 4x - 2$

a) $f(100) = 4(100) - 2 = 398$

b) $f(-2) = 4(-2) - 2 = -10$

a) $f(n+3) = 4(n+3) - 2$

$= 4n + 12 - 2$

$= 4n + 10$

③ $e(x) = x^2 + 1$

a) $e(3) = (3)^2 + 1 = 10$

b) $e(-3) = (-3)^2 + 1 = 10$

c) $e(n+5) = (n+5)^2 + 1$

$= (n+5)(n+5) + 1$

$n^2 + 5n + 5n + 25 + 1$

$n^2 + 10n + 26$

④ $f(x) = -3x + 2$

$g(x) = \frac{1}{2}x - 1$ $\rightarrow$

a) $f(\frac{1}{3}) = -3(\frac{1}{3}) + 2 = 1$

b) $g(4) = \frac{1}{2}(4) - 1 = 1$

$\dfrac{5}{1.5} =$

c) $\dfrac{f(-1)}{g(5)} = \dfrac{-3(-1) + 2}{\frac{1}{2}(5) - 1}$

$\dfrac{5}{\frac{3}{2}} = \dfrac{\frac{5}{1}}{\frac{3}{2}} = \dfrac{5}{1} \cdot \dfrac{2}{3} = \dfrac{10}{3} = \dfrac{5}{\frac{5}{2} - 1}$

⑤ Send <u>one</u> person from your group to pick up a graphing calculator for each person that needs one.

Using the table function of your graphing calculator (GDC) fill out the table below f.

$f(x) = \cdot 3x - 1.8$

$y = 3x - 1.8$

x	y
-3	-10.8
-1	-4.8
0	-1.8
2	4.2
11	31.2
8.1	22.5

If someone nearby was absent, please reach out and show them how to use it.

⑥ Review of Exponents (at least one rule)

$$n \cdot n \cdot n = n^3$$

$$n^3 \cdot n = n^4$$

$$x^a \cdot x^b = x^{a+b}$$

$$n^2 y^2 \cdot n y^5 = n^2 \cdot n \cdot y^2 \cdot y^5 = n^3 y^7$$

$$(2a)(3a^{10}) = 2 \cdot a \cdot 3 \cdot a^{10} = 6a^{11}$$

$$(3xy^3)(4xy) = 12x^2 y^4$$

$$\frac{28n^3}{14n^3} = \frac{2}{1} = 2$$

$$\frac{2}{3} n^2$$
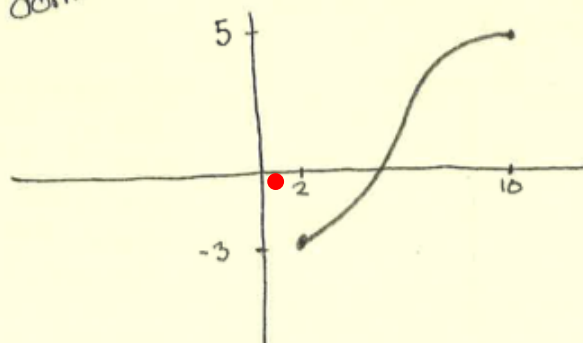
$$n \cdot n \cdot n \cdot n$$

$$\frac{(4n^3)(2n)}{12n^2} = \frac{4 \cdot n^3 \cdot 2 \cdot n}{12n^2} = \frac{28 \, n^4 n^2}{3 \, 12 n^2} = \boxed{\frac{2n^2}{3}}$$

$$n \cdot n$$

⑦ Find the domain and range

5

2

10

-3

domain :
$2 \leq x \leq 10$

range :
$-3 \leq y \leq 5$

HW
questions

2a $(3x+2)(5x+4)$

$15x^2 + 12x + 10x + 8$

$15x^2 + 22x + 8$

2c $(x+1)(x^2 - 3x + 5)$

	x^2	$-3x$	5
x	x^3	$-3x^2$	$5x$
1	x^2	$-3x$	5

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

4    $2y^2 + 3y - 20$

$$y \cdot 4 \quad 4$$

	y	4
$2y$	$2y^2$	$8y$
-5	$-5y$	-20

$$(2y - 5)(y + 4)$$

$-40 y^2$

$3y$

$-y \cdot 40y$
$y \cdot -40y$

$-2y \cdot 20y$
$2y \cdot -20y$

$-4y \quad 10y$
$4y \quad -10y$

$\boxed{-5y \quad 8y}$
$5y \quad -8y$

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⑦   Solve

$3x - 9 = 7 + \underline{2x - x}$

$3x - 9 = 7 + \underset{-x}{x}$
$\underset{-x}{}$

$2x - 9 = 7$
$\underset{+9}{} \quad \underset{+9}{}$

$2x = 16$

$x =$

Evaluate each function

a) $f(x) = 4x + 5$

$f(-2) = ?$

$4(-2) + 5$

$= -8 + 5$

$= \boxed{-3}$

b) $g(x) = 2x^2 - 5x + 1$

$g(3) = 2(3)^2 - 5(3) + 1$

$= 2(9) - 15 + 1$

$= 18 - 15 + 1$

$= \boxed{40}$

c) $h(x) = \dfrac{\sqrt{x+2}}{3}$

$h(7) = \dfrac{\sqrt{7+2}}{3}$

$= \dfrac{\sqrt{9}}{3} = \dfrac{3}{3} = \boxed{1}$

d) $k(x) = \dfrac{2x^2 + 1}{4}$

$k(-2) = \dfrac{2(-2)^2 + 1}{4}$

$= \dfrac{2[4] + 1}{4} = \left(\dfrac{9}{4}\right) = $ or 2.25

e) $f(n) = n^3 - 5n^2$

$f(1) = 1^3 - 5(1)^2$

$= 1 - 5(1)$

$= 1 - 5$

$= \boxed{-4}$

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[2] Simply by removing the parenthesis using either the box, FOIL, or Happy Fas

a) $(3x+2)(5x+4)$

$15x^2 + 12x + 10x + 8$

$\boxed{15x^3 + 22x + 8}$

b) $(n+3)(n-3)$

$n^2 - 3n + 3n - 9$

$\boxed{n^2 - 9}$

c) $(x+1)(x^2 - 3x + 5)$

	x^2	$-3x$	5
x	x^3	$-3x^2$	$5x$
1	x^2	$-3x$	5

$= \boxed{x^3 - 2x^2 - 2x + 5}$

3 Now the reverse. Factor the expressions. (look for common factors)

a) $y^4 + 2y^3 + 5y^2$

$y^2(y^2 + 2y + 5)$

b) $10m + 2$

$2(5m + 1)$

c) $b^2 - 36$ D.o.S.

$(b+6)(b-6)$

difference of squares

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4 Factor the quadratic trinomial (use box method)

First x last

$2y^2 + 3y - 20$

$= (2y - 5)(y + 4)$

	y	4
2y	$2y^2$	8y
-5	-5y	-20

$-40y^2$ .....

3y

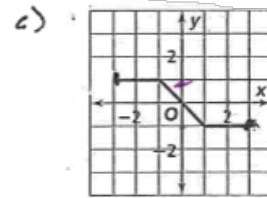| $-y$	40y
y	-40y
$-2y$	20y
$2y$	-20y
$-4y$	10y
$4y$	-10y
$5y$	-8y
$-5y$	8y

5. Is the graph a function or not.

a) yes

b) No
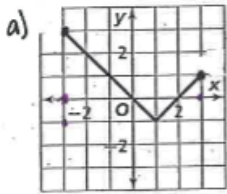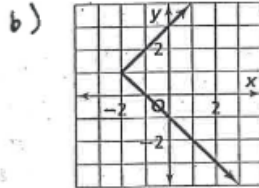
c) yes

6. Write the domain for "a" in question 5

$$-3 \le x \le 3$$

write the range for "c" in question 5.

$$-1 \le y \le 1$$

7. Solve

$3x - 9 = 7 + 2x - x$

$3x - 9 = 7 + x$
$-x -x$

$2x - 9 = 7$
$+9 +9$

$2x = 16$

$x = \frac{16}{2}$ $\boxed{x = 8}$

8. Solve

$\frac{3(n-2)}{3} + 3(4) = \frac{3(n)}{3}$

$n - 2 + 12 = n$

$n + 10 = n$
$-n -n$

$10 = 0$

A false statement indicates that there are no solutions

GOAL:

Formula Re-arrangement

NOTES

Solve for t

$$\frac{I}{pr} = \frac{p \cdot r \cdot t}{pr}$$

$$\frac{I}{pr} = t$$

$$t = \frac{I}{pr}$$

Solve for r

$$I = p + rt$$
$$-p \qquad -p$$

$$I - p = \frac{rt}{t}$$

$$r = \frac{I - p}{t}$$

Solve for h

$$V = \pi r^2 h$$

$$\frac{V}{\pi r^2} = \frac{\pi r^2 h}{\pi r^2}$$

$$h = \frac{V}{\pi r^2}$$

Solve for r

$$\frac{V}{\pi h} = \frac{\pi r^2 h}{\pi h}$$

$$r^2 = \frac{V}{\pi h}$$

$$r = \pm\sqrt{\frac{V}{\pi h}}$$

$$\sqrt{x^2} = \sqrt{4}$$

$$x = \pm 2$$

$$x = 2$$
$$x = -2$$

$$(-2)^2 = 4$$

Solve for ℓ

$$P = 2\ell + 2w$$
$$-2w \qquad\qquad -2w$$

$$\frac{P-2w}{2} = \frac{2\ell}{2}$$

$$\ell = \frac{P-2w}{2}$$

$$\ell = \frac{P}{2} - 1$$

Solve for a

$$C = 2a + b$$
$$-b \qquad\qquad -b$$

$$\frac{C-b}{2} = \frac{2a}{2}$$

$$\boxed{a = \frac{C-b}{2}}$$

BB

Get to know basic calculations
with your Graphing Calculator
(GDC)

$$5^2$$

$$7^3$$

$$(8^3 - 7^2)^3$$

$$-(-3)^2 + 7(4) - 3$$

$$\sqrt{4900}$$

$$\sqrt[3]{125}$$

$$Y = \qquad 3x + 2$$
$$-2x^2 + 3x + 1$$

when finished

✓ clear $Y =$

✓ turn off

Use GDC to find domain and range

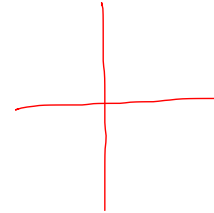NOTES: $y = \sqrt{x}$ $f(x) = \frac{1}{2}x - 5$ $y = -x^2$
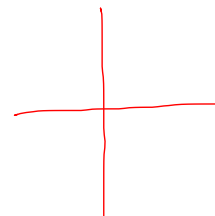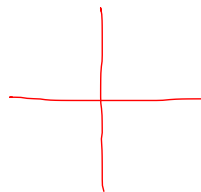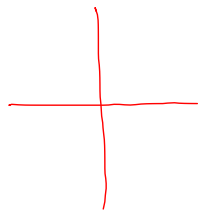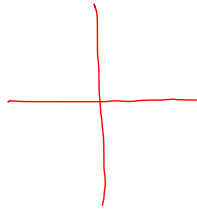
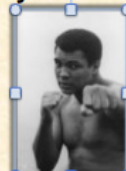NOTES: $y = \sqrt{x}$ $f(x) = \frac{1}{2}x - 5$ $y = -x^2$
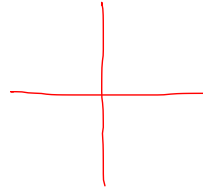
domain:

range:

Assignment 5
is a handout

"In the realm of ideas, everything depends on enthusiasm; in the real world, all rests on perseverance."

Goethe

"I hated every minute of training, but I said, 'Don't quit. Suffer now and live the rest of your life like a champion.'"

Muhammad Ali