

# CALCULATOR MANUAL WORKSHOP

\* You may NOT use these examples for your project! \*

## Solving Equations

ex.  $4x + 2 = 8$

- Step 1 Left side in  $y_1 =$
- Step 2 Right side in  $y_2 =$
- Step 3 **2nd TRACE**

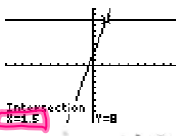
5: intersect  
 ENTER, ENTER, ENTER  
 Answer is X-coordinate

```

Plot1 Plot2 Plot3
V1=4X+2
V2=8
V3=
V4=
V5=
V6=
V7=

```

**X=1.9**



## Simplifying Expressions (Factoring)

ex.  $4(x^2+3)-(x-3)+6(2x+1)$

- A.  $4x^2 + 11x + 15$
- B.  $4x^2 + 11x + 21$**
- C.  $4x^2 + 11x + 10$
- D.  $4x^2 + 11x + 16$

X	Y1	Y2
-2	16	16
-1	15	15
0	10	10
1	21	21
2	28	28

- 1 Question in  $y_1$
- 2 Answer choice in  $y_2$
- 3 check if tables match

## Transformations, Vertices, Intercepts (Quadratics)

ex 1 compare

$y_1 = x^2$  and  $y_2 = 2x^2 + 3$

scroll to left, press **ENTER** to make line bold.

```

Plot1 Plot2 Plot3
V1=X^2
V2=2X^2+3
V3=
V4=

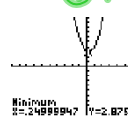
```



narrower, up 3 units

ex 2 Find the vertex of  $y = 2x^2 - x + 3$ .

- 1 Type into  $y_1 =$
- 2 **GRAPH** is it a max or min?
- 3 **2nd TRACE** 3 or 4.
- 4 Follow directions on screen
- 5 Round if necessary **(0.25, 2.875)**



ex 3 Find the roots of  $y = 2x^2 - x + 3$ .

- 1 Type into  $y_1 =$
- 2  $y_2 = 0$ .
- 3 **2nd TRACE**
- 5: intersect enter enter enter **2, -1.5, 1.5**



## Solving Systems

ex. Find the solution to

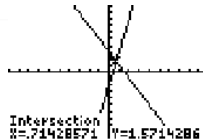
$y = 5x - 2$   
 $2x + y = 3 \Rightarrow y = -2x + 3$

- 1 Solve both for  $y =$
- 2 Type into  $y_1 =$  and  $y_2 =$
- 3 Make sure you see intersection!
- 4 **2nd TRACE** 5: intersect ENTER ENTER ENTER

```

Plot1 Plot2 Plot3
V1=5X-2
V2=-2X+3
V3=
V4=
V5=
V6=
V7=

```



**(.714, 1.571)**

## Properties of Graphs (Writing Equations)

ex. Write the function rule for the following table.

X	Y
-2	7
-1	5
0	3
1	1

- 1 **STAT** 1: Edit...
- x's  $\rightarrow$  L1 y's  $\rightarrow$  L2

L1	L2	L3	Z
-2	7		
-1	5		
0	3		
1	1		

- 2 **STAT**  $\blacktriangleright$  **CALC**
- 4: LinReg OR 5: QuadReg
- (look @ your data !!)

```

EDIT [2nd] [CALC] TESTS
1:1-Var Stats
2:2-Var Stats
3:Med-Med
4:LinReg(ax+b)
5:QuadReg
6:CubicReg
7:QuartReg

```

**LinReg**  
 $y = ax + b$   
 $a = -2$   
 $b = 3$   
 $y = -2x + 3$