

9.2 w Graphing Calculator DAY TWO with work

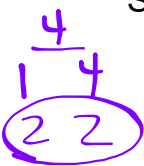
WARM-UP:

Factor the trinomial.

$$x^2 + 4x + 4$$

$$(x+2)(x+2)$$

$$(x+2)^2$$



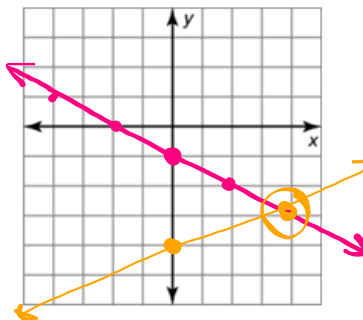
Solve the linear system of equations by graphing.

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

$$b: -1 \quad m: -\frac{1}{2}$$

$$y = \frac{1}{4}x - 4$$

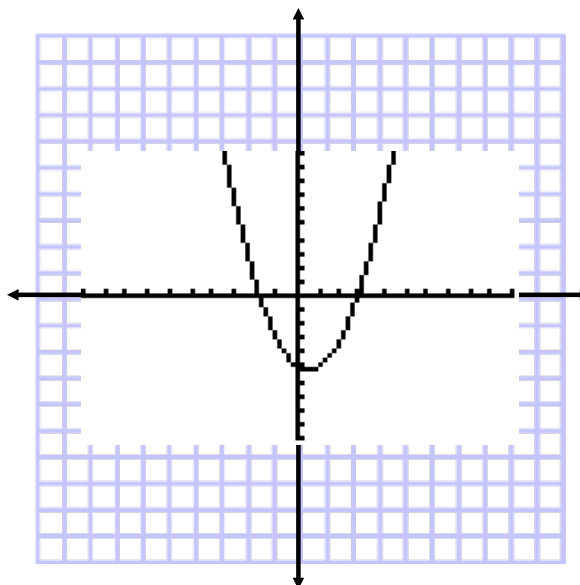
$$b: -4 \quad m: \frac{1}{4}$$



$$(4, -3)$$

Example. Find the zeros ... approximate to the nearest tenth.

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

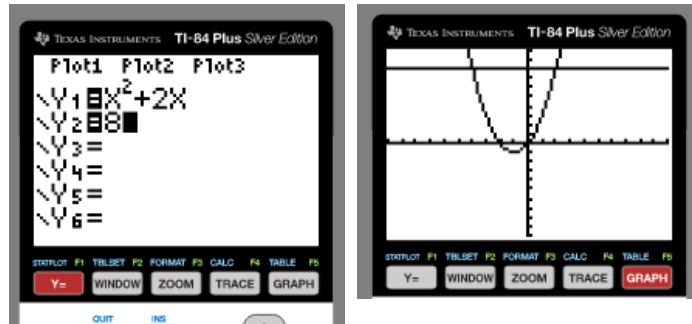


Method 2: ON YOUR CALCULATOR

Use the Y= button on your calculator, similar to solving a system of equations (like the warm-up) find the point of intersection between the left side of the equation and the right side of the equation.

$$x^2 + 2x = 8$$

y_1 ↗
 ↘ y_2



Now you need to find the point of intersection.

2nd Trace

5) Intersection

First curve?

Second curve?

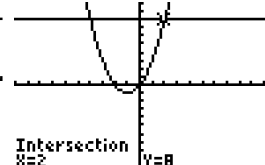
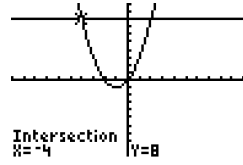
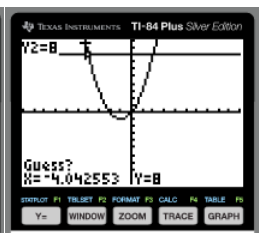
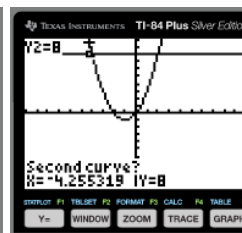
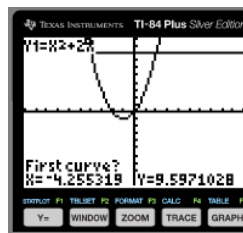
Guess?

solution is the x-value

repeat if there is a second intersection.



Solution(s):
 $x \approx -4, 2$



Method 3: ON THE CALCULATOR

1) Get it into standard form like

```

Plot1 Plot2 Plot3
Y1=X^2+2X-8
Y2=
Y3=
Y4=
Y5=
Y6=
    
```

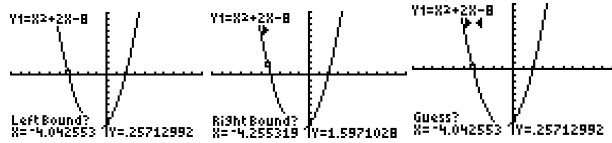
Method 1, but type that into y=.

2) 2nd Trace

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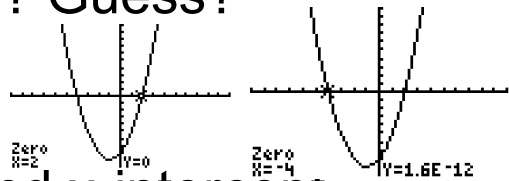
2nd Trace
1:value
2:zero
3:minimum
4:maximum
5:intersect
6:dy/dx
7:∫f(x)dx
    
```

3) (2)zeros



4) Left bound? Right bound? Guess?

5) Solution is the x value.



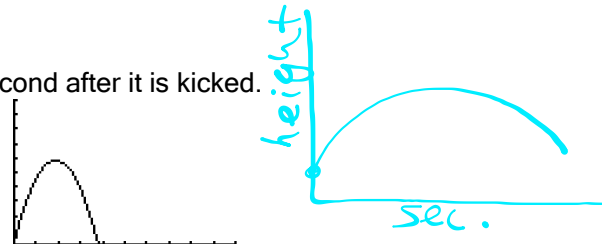
6) Repeat if there is a second x-intercept.

Example:

A soccer player kicks a soccer ball 2 feet above the ground with an initial vertical velocity of 60 feet per second. The function $h = -16t^2 + 60t + 2$ represents the height h (in feet) of the soccer ball after t seconds.

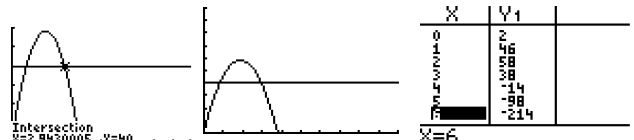
(a) Find the height of the soccer ball each second after it is kicked.

$t=1$ $h=46$ ft
 $t=2$ $h=58$ ft
 $t=3$ $h=38$ ft



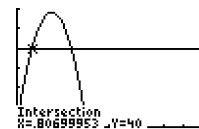
(b) Use the results of part (a) to estimate when the height of the soccer ball is 40 feet.

$40 = -16t^2 + 60t + 2$
 $X \approx 2.9, 0.8$



(c) Using a graph, after how many seconds is the soccer ball 40 feet above the ground?

$X \approx 2.9, 0.8$



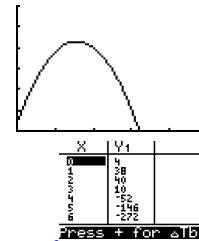
9.2 with the Graphing Calculators DAY TWO

A tennis ball is thrown straight up into the air with an initial velocity of 50 ft/sec. The release point is 4 feet above the ground. The function that represents this is:

$$y = -16t^2 + 50t + 4, \text{ where } h \text{ is the height and } t \text{ is the time in seconds.}$$

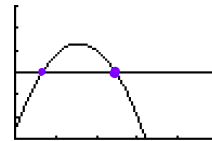
a. Find the height of the tennis ball each second after it is thrown.

$t=1$ 38 ft
 $t=2$ 40 ft
 $t=3$ 10 ft

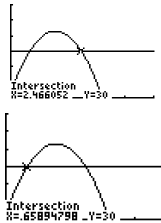


b. Use the results of part (a) to estimate when the height of the tennis ball is 30 feet.

$x \approx 0.9, 2.8$



c. After how many seconds is the tennis ball 30 feet above the ground?



$x \approx 2.5, 0.7$

Apr 18-9:12 AM

HW Assignment:

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A: 2, 8, 12, 18, 24, 26, 28, 36, 38, 42, 46, 52, 54, 58, 60, 62, 66

B: 1 - 8, 9 - 52 (M3)

C: 1 - 4, 6, 10, 14, 18, 26, 28, 30, 38, 44, 48, 54

Apr 18-9:20 AM