

Grab a Week #5 Packet Bell Ringer

Monday 12/16


(time, height)

On the fourth of July fireworks are discharged and follow a path given by $h = -16t^2 + 160t + 4$, where H is the height of the fireworks in feet and t is time in seconds.

1. How high above the ground were the fireworks discharged?

4 feet

2. When will the debris hit the ground?

height (s,) 
$$x = \frac{-(-160) \pm \sqrt{(-160)^2 - 4(-16)(4)}}{2(-16)} \approx 10.02 \text{ sec.}$$

3. How long did it take the fireworks to reach their maximum height?

$$-\frac{b}{2a} = \frac{-(-160)}{2(-16)} = 5 \text{ Sec}$$

4. How high did the fireworks go in the air?

$$\Rightarrow 16(5)^2 + 160(5) + 4 = 404 \text{ ft}$$

4.7 online hw due today

4.8 online hw due tomorrow

Week #4 packet due tomorrow

Standard 4D and 4E Thursday

Solve by Elimination

Solve the following system of equations: $y = x^2 - 11x - 36$

$$\begin{aligned} & \left(y = -12x + 36 \right) \\ & -y = 12x - 36 \end{aligned}$$

Step 1 Eliminate y.

$$\begin{array}{r} y = x^2 - 11x - 36 \\ -y = 12x - 36 \\ \hline 0 = x^2 + x - 72 \end{array}$$

Step 2 Factor and solve for x.

$$\begin{array}{l} -72 \quad 0 = (x+9)(x-8) \\ +9 \quad -8 \\ \begin{array}{l} x+9=0 \\ -9 \quad -9 \\ x=-9 \end{array} \quad \begin{array}{l} x-8=0 \\ +8 \quad +8 \\ x=8 \end{array} \end{array}$$

Step 3 Find the corresponding y values. Use either equation.

$$\begin{aligned} & (-9, 144) \\ & (8, -60) \end{aligned}$$

$$\begin{aligned} y &= -12x + 36 \\ -12(-9) + 36 \\ -12(8) + 36 \end{aligned}$$

Now Try Graphing to find the solutions and compare the results.

$$\begin{aligned}
 \text{c. } & y = x^2 + x - 1 \\
 & -1(y = -2x + 3) \\
 & (-4, 1) \\
 & (1, 1)
 \end{aligned}$$

$$\begin{aligned}
 & y = x^2 + x - 1 \\
 & - y = 2x - 3 \\
 \hline
 & 0 = x^2 + 3x - 4 \\
 & 0 = (x+4)(x-1) \\
 & x = -4, 1
 \end{aligned}$$

$$\begin{array}{c}
 -4 \\
 \wedge \\
 4 \quad -1
 \end{array}$$

d).
$$\begin{cases} y = x^2 - 6x + 11 \\ y = -x^2 + 14x - 21 \end{cases}$$

e. $y = x^2 - 3x - 2$
 $-(y = -3x - 8)$

$$\begin{array}{r} y = x^2 - 3x - 2 \\ -y = 3x + 8 \\ \hline 0 = x^2 + 6x - 6 \end{array}$$

$$\sqrt{-b} = \sqrt{x^2}$$

$$\pm i\sqrt{b} = x$$

No sol!

due Wednesday

4.8 online hw pg 256-257 #s 13-25
odd, 28, 39, 41, 49, 51

