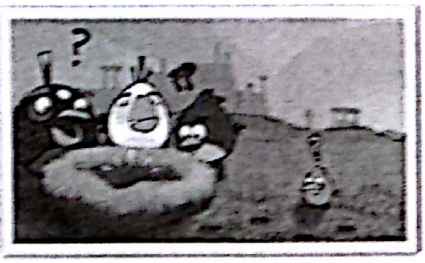
Day 7

# ANGRY BIRDS "The Parabolic Edition"

Name: Key



Red Bird, Yellow Bird, Blue Bird and Black Bird are angry with the pigs. The pigs stole the bird's eggs. The birds want their eggs back and will stop at nothing to get them back. The flight path of the birds can be modeled with a parabola.
Use "x" as the distance and "y" as the height.

1. What is the maximum height EACH bird flew?
2. What was the total distance EACH bird traveled?

Next, determine which bird flew the highest and traveled the longest.

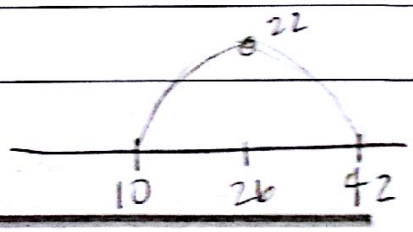
Finally, figure out which bird hit the following pigs.

1. King Pig located at point (6, 25) — Red Bird

2. Moustache Pig located at point (15, 33)? — Blue Bird

(See p. 2 for details)

## Yellow Bird

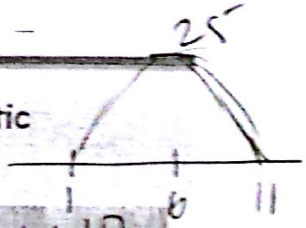



Yellow Bird launches of from point (10, 0). His flight path reaches a maximum height of 22 yards and lands at point (42, 0).

Maximum Height: 22 Axis of Symmetry: $x = 26$ Distance Traveled: 32

equation: $y = -.09x^2 + 4.47x - 36.1$

## Red Bird



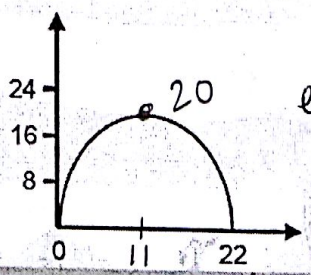

Red Bird's flight path can be modeled by the quadratic equation $y = -x^2 + 12x - 11$.

Maximum Height: 25 Axis of Symmetry: $x = 6$ Distance Traveled: 10

# Black Bird 4th ED

NAME: _____

Black Bird's flight is represented by the graph below.




equation: $-.17x^2 + 3.64x$

Maximum Height: 20 Axis of Symmetry $x = 11$ Distance Traveled: 22

Questions? sergio.alvarez

# Blue Bird 4th ED

equation: $y = -x^2 + 22x - 72$

The table below contains partial data points of Blue Birds trajectory.

vertex

| x | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| y | 0 | 13 | 24 | 33 | 40 | 45 | 48 | 49 | 48 | 45 | 40 | 33 | 24 | 13 | 0 |

Maximum Height: 49 Axis of Symmetry $x = 11$ Distance Traveled: 18

Graph the 2 pigs and all 4 of the birds' paths: