

Finding Intercepts from Graphs

- The graph shows the height of a ball for each second x that it is airborne. Use the graph to estimate the x - and y -intercepts of the function, where the function is positive and negative, and interpret the meanings in the context of the situation.

x -int: $(9, 0)$

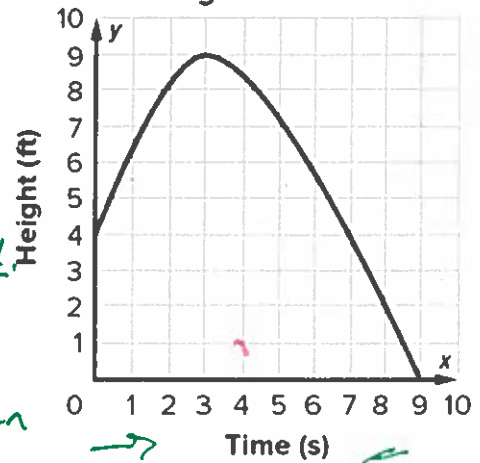
Hits the ground after 9 seconds

y -int: $(0, 4)$ Starts at a height of 4ft.

Positive: $0 < x < 9$

Positive height between 0 sec. and 9 sec.

Height of the Ball



Neg: Can't.

- The graph shows the population y of birds x years after they were brought to an endangered species park.

- Use the graph to estimate the x and y intercepts.

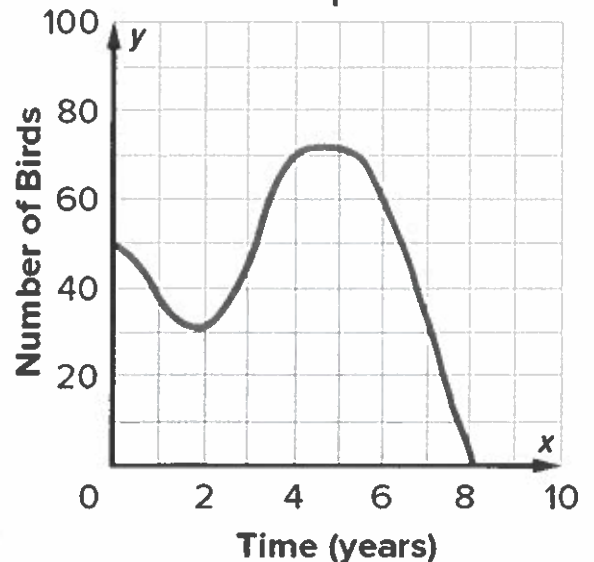
x : $(8, 0)$ y : $(0, 50)$

- What do the x and y intercepts mean in context of this situation?

x : All birds have died after 8 years

y : They start w/ 50 birds

Bird Population



Finding Intercepts from Graphs

3. Violet starts the semester with \$150 in her student lunch account. Each day she spends \$3.75 on lunch. The table shows the function relating the amount of money remaining in her lunch account to the number of days Violet has purchased lunch.

Time (Days)	Balance (\$)
x	y
0	150
2	142.50
5	131.25
10	112.50
15	93.75
30	37.50
40	0

- a. Find the x and y intercepts of this function.

$x: (40, 0)$
 $y: (0, 150)$

- b. What do the intercepts mean in context of this situation?

x : After 40 days she is out of \$
 y : Starts w/ \$150

4. Grayson is creating 2-ounce giveaway bags from a larger box of candy. The table shows the function relating the weight of candy remaining in the box y and the number of bags x Grayson has created.

Number of Bags	Weight (oz)
x	y
0	80
2	76
5	70
10	60
15	50
25	30
40	0

- a. Find the x and y intercepts of this function.

$x: (40, 0)$

$y: (0, 80)$

- b. What do the intercepts mean in context of this situation?

x : After 40 bags, no candy

y : 80 oz of candy before he starts

Intercepts of Graphs

Key terms for this section:

- x-intercept
- y-intercept
- Root
- Zeros

1. Use the graph to identify the following:

a. x-intercept

$$(3, 0)$$

b. y-intercept

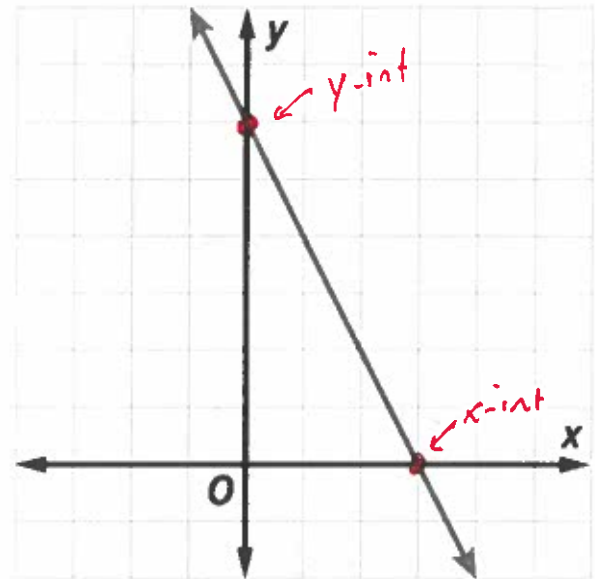
$$(0, 6)$$

c. Where the graph is positive

$$x < 3$$

d. Where the graph is negative

$$x > 3$$



2. Use the graph to identify the following:

a. x-intercept

$$(-2, 0)$$

b. y-intercept

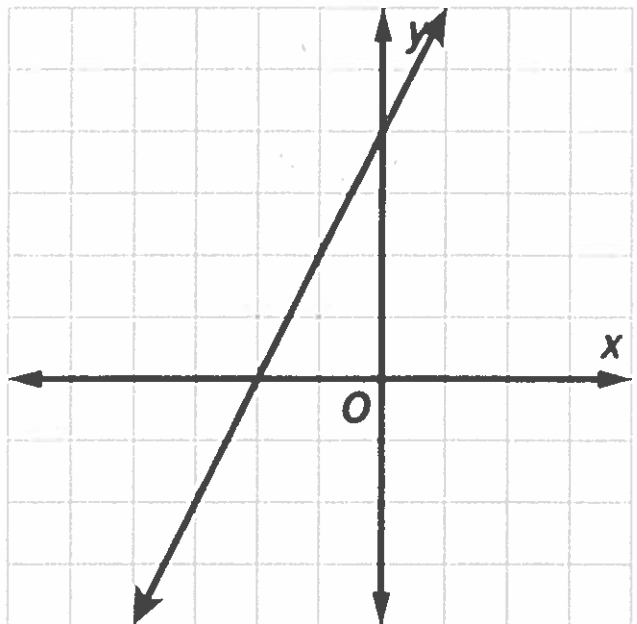
$$(0, 4)$$

c. Where the graph is positive

$$x > -2$$

d. Where the graph is negative

$$x < -2$$



Intercepts of Graphs

3. Use the graph to identify the following:

a. x-intercept

$$(-4, 0) \quad (3, 0)$$

b. y-intercept

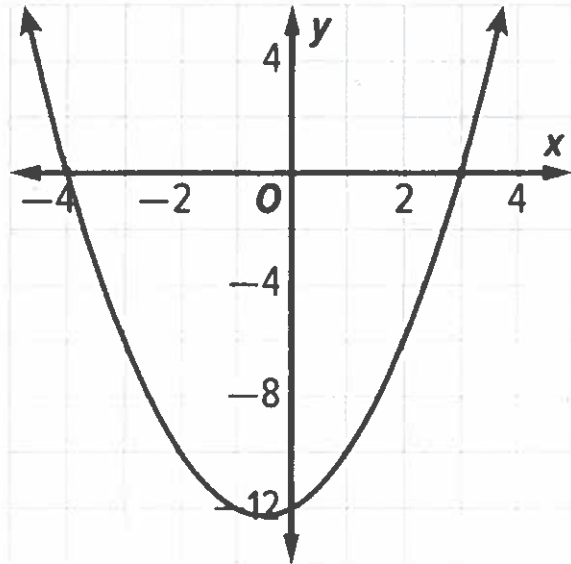
$$(0, -12)$$

c. Where the graph is positive

$$x > 3 \quad x < -4$$

d. Where the graph is negative

$$-4 < x < 3$$



4. Use the graph to identify the following:

a. x-intercept

$$(-2, 0) \quad (-1, 0)$$

b. y-intercept

$$(0, -2)$$

c. Where the graph is positive

$$-2 < x < -1$$

d. Where the graph is negative

$$x > -1$$

$$x < -2$$

