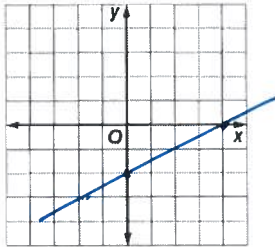


3-2 Practice

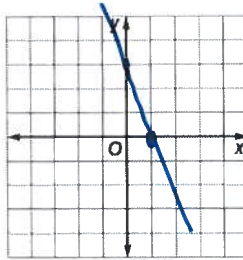
Zeros of Linear Functions

Find the zero of each linear function by graphing.

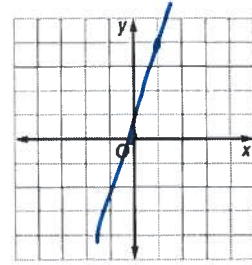
1. $\frac{1}{2}x - 2 = 0$ 4



2. $-3x + 2 = -1$ 1

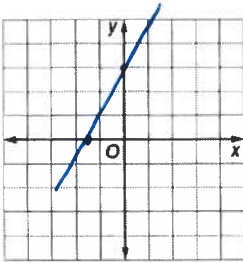


3. $4x - 2 = -2$ 0



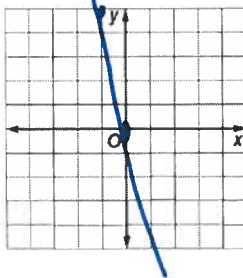
Find the zero of each linear function by graphing. Verify your answer algebraically

7. $13x + 2 = 11x - 1$
 -1.5 or $-\frac{3}{2}$



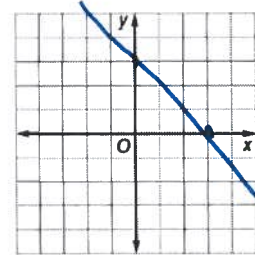
8. $-9x - 3 = -4x - 3$

0



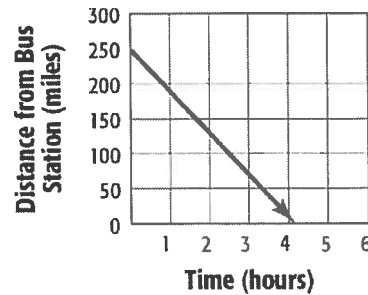
9. $-\frac{1}{3}x + 2 = \frac{2}{3}x - 1$

3



10. **DISTANCE** A bus is driving at 60 miles per hour toward a bus station that is 250 miles away. The function $d = 250 - 60t$ represents the distance d from the bus station the bus is t hours after it has started driving. Find the zero of this function. Describe what this value means in this context.

Zero is ≈ 4.17 hrs. That means it will take the bus 4.17 hours to arrive at the station



3-2 Word Problem Practice

Zeros of Linear Functions

1. **PET CARE** You buy a 6.3-pound bag of dry cat food for your cat. The function $c = 6.3 - 0.25p$ represents the amount of cat food c remaining in the bag when the cat is fed the same amount each day for p days. Find the zero of this function. Describe what this value means in this context.

25.2, there are 25 full servings of cat food in the bag.

2. **SAVINGS** Jessica is saving for college using a direct deposit from her paycheck into a savings account. The function $m = 3045 - 52.50t$ represents the amount of money m still needed after t weeks. Find the zero of this function. What does this value mean in this context?

58, it will take 58 weeks for Jessica to save the money she needs

3. **FINANCE** Michael borrows \$100 from his dad. The function $v = 100 - 4.75p$ represents the outstanding balance v after p weekly payments. Find the zero of this function. Describe what this value means in this context.

21.05 After 21 weeks he will pay back \$99.75 (21 * 4.75) he pays 0.25 on week 22.

4. **BAKE SALE** Ashley has \$15 in the Pep Club treasury to pay for supplies for a chocolate chip cookie bake sale. The function $d = 15 - 0.08c$ represents the dollars d left in the club treasury after making c cookies. Find the zero of this function. What does this value represent in this context?

187.50 she breaks even at 188 cookies.

5. **DENTAL HYGIENE** You are packing your suitcase to go away to a 14-day summer camp. The store carries three sizes of tubes of toothpaste.

Tube	Size (ounces)	Size (grams)
A	0.75	21.26
B	0.9	25.52
C	3.0	85.04

Source: National Academy of Sciences

- a. The function $n = 21.26 - 0.8b$ represents the number of remaining brushings n using b grams per brushing using Tube A. Find the zero of this function. Describe what this value means in this context.
- 26.575 tube A will provide 26 brushings
- b. The function $n = 25.52 - 0.8b$ represents the number of remaining brushings n using b grams per brushing using Tube B. Find the zero of this function. Describe what this value means in this context.
- 31.9 tube B will provide 31 brushings
- c. Write a function to represent the number of remaining brushings n using b grams per brushing using Tube C. Find the zero of this function. Describe what this value means in this context.
- $n = 85.04 - 0.8b$ 106.3
tube C will provide 106 brushings
- d. If you will brush your teeth twice each day while at camp, which is the smallest tube of toothpaste you can choose? Explain your reasoning.
- tube B, you need 28 brushings. tube A is not enough and tube C is too much.