



ACT COMPASS Preparation Worksheet

Algebra: Linear Equations/ Two Variable

Find the slope of the line through each pair of points.

1. $(19, -16), (-7, -15)$

5. $(6, -10), (-15, 15)$

2. $(-4, 7), (-6, -4)$

6. $(3, -20), (5, 8)$

3. $(17, -13), (17, 8)$

7. $(-19, 12), (-9, 1)$

4. $(3, 0), (-11, -15)$

8. $(6, -12), (15, -3)$

Find the slope of each line.

9. $y = -\frac{5}{2}x - 5$

15. $y = -1$

10. $y = -x + 3$

16. $-2y - 10 + 2x = 0$

11. $2x - y = 1$

17. $3x + 20 = -4y$

12. $8x + 3y = -9$

18. $-1 = -2x + y$

13. $x - y = -2$

19. $0 = 5y - x$

14. $3x + 2y = 6$

Write the slope-intercept form of the equation of each line.

20. $3x - 2y = -16$

22. $6x + 5y = -15$

21. $9x - 7y = -7$

23. $11x - 4y = 32$

Write the slope intercept of the equation of the line through the given point with the given slope.

24. through: $(1, 2)$, slope = 7

26. through: $(2, -4)$, slope = -1

25. through: $(-2, 5)$, slope = -4

27. through: $(3, 1)$, slope = $\frac{1}{2}$

Write the slope intercept form of the equation of the line described.

28. through: $(4, 2)$, parallel to $y = -\frac{3}{4}x - 5$

29. through: $(-4, 0)$, perpendicular to $y = \frac{3}{4}x - 2$

30. through: $(2, 0)$, parallel to $y = \frac{1}{3}x + 3$

31. through: $(-2, 4)$, perpendicular to $y = -\frac{5}{2}x + 5$

Solve the word problems below.

32. The difference of two numbers is 3. Their sum is 13. Find the numbers.

33. The school that Stefan goes to is selling tickets to a choral performance. On the first day of ticket sales the school sold 3 senior citizen tickets and 1 child ticket for a total of \$38. The school took in \$52 on the second day by selling 3 senior citizen tickets and 2 child tickets. Find the price of a senior citizen ticket and the price of a child ticket.

34. The state fair is a popular field trip destination. This year the senior class at High School A and the senior class at High School B both planned trips there. The senior class at High School A rented and filled 8 vans and 8 buses with 240 students. High School B rented and filled 4 vans and 1 bus with 54 students. Every van had the same number of students in it as did the buses. Find the number of students in each van and in each bus.

35. Brenda's school is selling tickets to a spring musical. On the first day of ticket sales the school sold 3 senior citizen tickets and 9 child tickets for a total of \$75. The school took in \$67 on the second day by selling 8 senior citizen tickets and 5 child tickets. What is the price of one senior citizen ticket and one child ticket?

36. Matt and Ming are selling fruit for a school fundraiser. Customers can buy small boxes of oranges and large boxes of oranges. Matt sold 3 small boxes of oranges and 14 large boxes of oranges for a total of \$203. Ming sold 11 small boxes of oranges and 11 large boxes of oranges for a total of \$220. Find the cost each of one small box of oranges and one large box of oranges.

37. DeShawn and Shayna are selling flower bulbs for a school fundraiser. Customers can buy bags of wildflower bulbs and bags of daffodil bulbs. DeShawn sold 10 bags of wildflower bulbs and 12 bags of daffodil bulbs for a total of \$380. Shayna sold 6 bags of wildflower bulbs and 8 bags of daffodil bulbs for a total of \$244. What is the cost each of one bag of wildflower bulbs and one bag of daffodil bulbs?