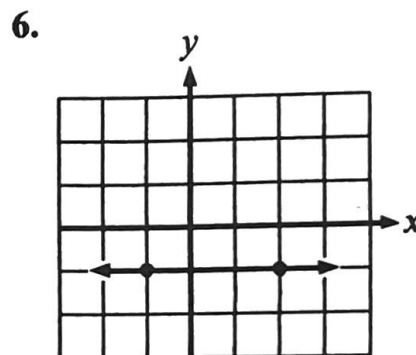
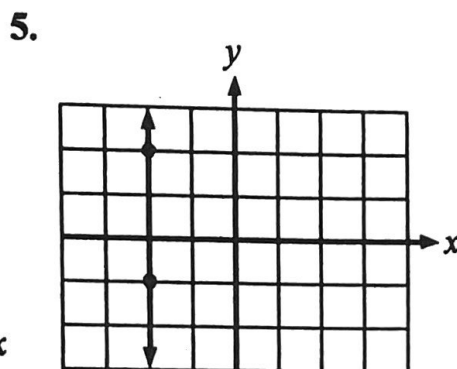
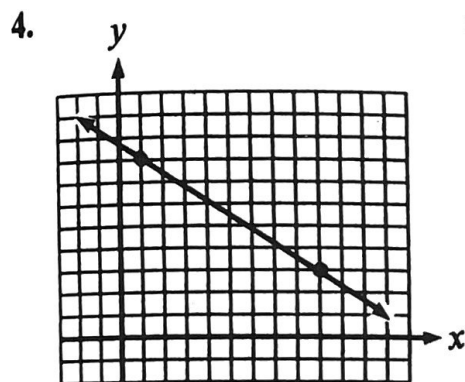
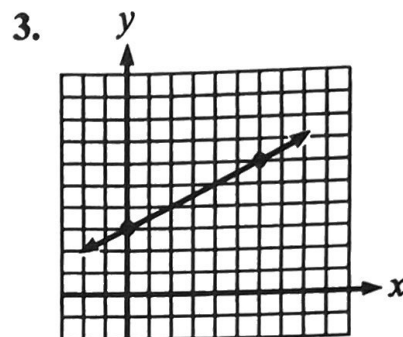
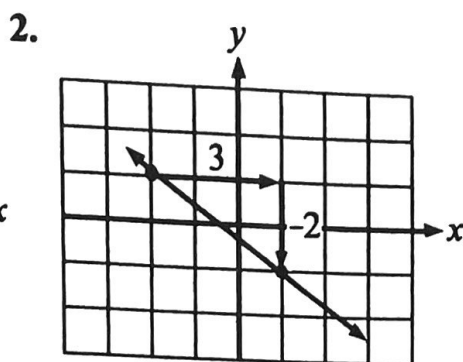
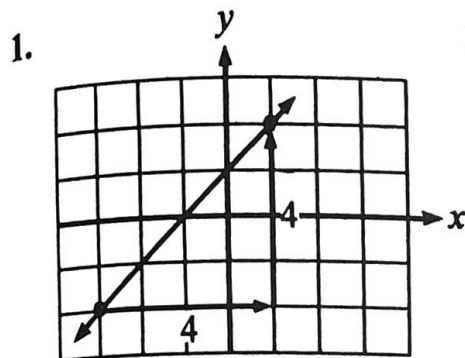


EXERCISES

Find the slope of each line using the given two points on the line.

(Hint: The rise of a line is negative if it falls from left to right.)



Find the slope of each line with its rise and run.

- | | | | |
|---------------------|---------------------------------|--|--|
| 7. rise 3, run 1 | 8. rise 1, run 3 | 9. rise -4, run 2 | 10. rise 2, run 6 |
| 11. rise -2, run 6 | 12. rise 5, run 2 | 13. rise 2, run 5 | 14. rise 8, run 0 |
| 15. rise 0, run 8 | 16. rise $-\frac{1}{2}$, run 3 | 17. rise $\frac{1}{2}$, run $\frac{1}{3}$ | 18. rise $-1\frac{1}{2}$, run $\frac{3}{4}$ |
| 19. rise 1.5, run 3 | 20. rise 4.5, run 1.5 | | |

Find the slope of each line containing the given two points.

- | | | |
|---|--|---|
| 21. (4, 2) and (2, 4) | 22. (-4, 2) and (2, 4) | 23. (4, -2) and (2, 4) |
| 24. (4, -2) and (6, -2) | 25. (-6, 0) and (0, 6) | 26. (0, -6) and (6, 0) |
| 27. (-4, 0) and (-4, 8) | 28. (0, 0) and (-2, 4) | 29. (-3, -7) and (-7, -3) |
| 30. (1.2, 5) and (0.6, 6.2) | 31. (-3.4, 1.4) and (0.4, 9) | 32. $(\frac{1}{2}, 1)$ and $(1, \frac{1}{2})$ |
| 33. $(\frac{1}{2}, \frac{1}{2})$ and $(\frac{1}{4}, \frac{1}{5})$ | 34. $(-\frac{1}{4}, 2)$ and $(2, \frac{1}{4})$ | 35. $(\frac{1}{4}, 4)$ and $(4, \frac{1}{2})$ |
| 36. (1, 4) and (-3, 0) | 37. (1, 5) and (-6, -2) | 38. (-2, -4) and (2, 4) |
| 39. (-1, -3) and (4, -2) | 40. (-7, -8) and (-3, -4) | |

Draw a line passing through the given point with the given slope.

- | | | | |
|-----------------------------------|-----------------------------------|----------------------------------|----------------------------------|
| 41. (1, 2), slope $\frac{1}{2}$ | 42. (-2, 4), slope $-\frac{1}{2}$ | 43. (-2, 3), slope 3 | 44. (-3, 2), slope $\frac{2}{3}$ |
| 45. (3, -1), slope 0 | 46. (3, -2), slope $-\frac{3}{5}$ | 47. (0, 3), slope $-\frac{2}{5}$ | 48. (-5, 2), slope 4 |
| 49. (-5, -2), slope $\frac{4}{5}$ | 50. (-3, 4), slope undefined | | |

-----Continued-----

Find the slope and y -intercept of each line.

51. $y = 2x - 5$

52. $y = -2x + 5$

53. $y = -7x - 8$

54. $y = 7x - 8$

55. $y = \frac{2}{3}x + 4$

56. $y = -\frac{2}{3}x + 4$

57. $y = -\frac{1}{2}x - \frac{3}{4}$

58. $y = \frac{1}{2}x + \frac{3}{4}$

59. $y = -4x$

60. $y = -x + 5$

61. $y = x - 10$

62. $y = 7x$

63. $y = x$

64. $y = -x$

65. $y = 5$

66. $y = -2$

67. $y = 7 - 8x$

68. $y = 1 + 2x$

69. $y = -2 - \frac{1}{3}x$

70. $y = 8 - \frac{4}{5}x$

71. $y - 2x = 15$

72. $y + 2x = 15$

73. $2x + y = 6$

74. $2x - y = 6$

75. $2y - 2x = 3$

76. $2y + 4x = 1$

77. $4y + 2x = 5$

78. $4y - 2x = 3$

79. $3x - 2y = 6$

80. $3x + 2y = 7$

Graph each equation using the slope and y -intercept .

81. $y = 2x + 3$

82. $y = -2x + 1$

83. $y = 2x - 3$

84. $y = -2x - 1$

85. $y = 3x - 2$

86. $y = -3x + 1$

87. $y = -3x - 1$

88. $y = 3x - 4$

89. $2y - 4x = 5$

90. $2x - 4y = 5$

91. What is the slope of a vertical line ?

92. What is the slope of a horizontal line ?

93. What is the value of $\frac{y_2 - y_1}{x_2 - x_1}$ if $x_1 = x_2$?

94. In the equation $ax + 4y = 6$, for what value of a that the equation has a slope 2 ?

95. In the equation $6x - ay = 3$, for what value of a that the equation has a slope -2 ?

96. Determine whether the given points $(1, 3)$, $(2, 5)$, and $(4, 9)$ lie on the same line.

97. Determine whether the given points $(2, -6)$, $(0, -2)$, and $(-2, 3)$ lie on the same line.

98. The points $(2, -3)$, $(4, 1)$, and $(5, y)$ lie on the same line. Find the value of y .

99. The points $(2, -3)$, $(0, -2)$, and $(x, 3)$ lie on the same line. Find the value of x .

100. Find the formula for the slope (m) and the formula for the y -intercept of the linear equation $ax + by = c$ in terms of a , b , and c .

101. A ladder hit the wall at a height of 39 feet with its base 6 feet from the wall. Find the slope of the ladder.

102. If the temperature in the City of Hawthorne drops from $96^\circ F$ at 2 P.M. to $78^\circ F$ at 8 P.M., what is the average rate of change in the temperature ?

Estimate the temperature at 12 P.M..

(Hint: The average rate of change is the slope connecting the points $(2, 96)$ and $(8, 78)$).

On the airplane, a three-year old boy asks his mother.

Boy: Where are we going ?

Mother: We are going to grandma's home.

Boy: Why are so many people going to grandma's home ?