

Taken from § 2.4 in Rockswold.

In exercises 17 - 22, match the equation with its graph (a.-f.) in the text, where m and b are constants. You only need to write the correct letter down here.

17. $y = mx + b$, $m > 0$ and $b \neq 0$

18. $y = mx + b$, $m < 0$ and $b \neq 0$

19. $y = mx$, $m < 0$

20. $y = b$

21. $y = mx$, $m > 0$

22. $x = h$

In exercises 23 and 25, determine the slope of the lines depicted in the text and then find the linear function of the line. You will need to use the point-slope form of a line and then simplify this into slope-intercept form.

23.

25.

In exercises 43 - 63 odd, find the function form of the line satisfying the given conditions using the point-slope form of a line and then simplify this into slope-intercept form.

47. Slope $\frac{1}{3}$, passing through $(0,-5)$

49. Passing through $(3,-2)$ and $(2,-1)$

51. x -intercept 2, y -intercept $-\frac{2}{3}$

53. x -intercept 1, y -intercept 3

55. Parallel to $g(x) = 4x - 2$, passing through (1,3)

57. Passing through (-3,2) and parallel to the line passing through (-2,3) and (1,-2)

59. Perpendicular to $g(x) = -\frac{1}{3}x + 4$, passing through (-3,5)

61. Passing through $(-\frac{1}{2}, -2)$ and perpendicular to the line passing through $(-1,6)$ and $(8,-4)$

63. Passing through $(0, b)$ and perpendicular to the line having slope c with $c \neq 0$

In exercises 75 - 81 odd, find an equation of a line satisfying the given conditions.

75. Vertical, passing through $(-1,6)$

77. Horizontal, passing through $(\frac{3}{4}, -\frac{5}{6})$

79. Perpendicular to $y = \frac{1}{2}$, passing through $(4,-9)$

81. Parallel to $x = 4$, passing through $(-\frac{2}{3}, \frac{1}{2})$

In exercises 83 and 85, decide whether the points in the table lie on a line. If they do, find the slope-intercept form of the equation of the line they lie on.

83.

x	1	2	3	4
y	-4	0	4	8

85.

x	-3	0	3	6
y	4	8	14	18

89. The graph on the top right of page 133 illustrates the average number of people ining on parcels of land of various sizes in 1960.

a. The graph passes through the points $(2,100)$ and $(4,200)$. Discuss the meaning of these points.

b. Explain why it is reasonable for the graph to pass through the point $(0,0)$.

c. Find the linear function describing the line in slope-intercept form.

d. Interpret the slope as a rate of change.

91. The annual cost of teh average private college or university is shown in the table. This cost includes tuition, fees, room, and board.

Year	2003	2007
Cost	\$25,000	\$37,000

a. Find the slope-intercept form of the linear function which passes through these data points.

b. Interpret the slope as a rate of change.

c. Estimate the cost of a private college in 2005 using the function found in part (a).

105. Ring sizes can be modeled by a linear function. If the circumference of a person's finger is 4.9cm, then the ring size is 5 and if the circumference is 5.4cm, then the ring size is 7.

a. Find the linear function $R(c)$ in slope-intercept form which models the ring size R of a finger with circumference c .

b. A person's finger has circumference of 6.16 centimeters. What ring size should they be purchasing?