Ch.1-4 – Equations of Lines and Modeling

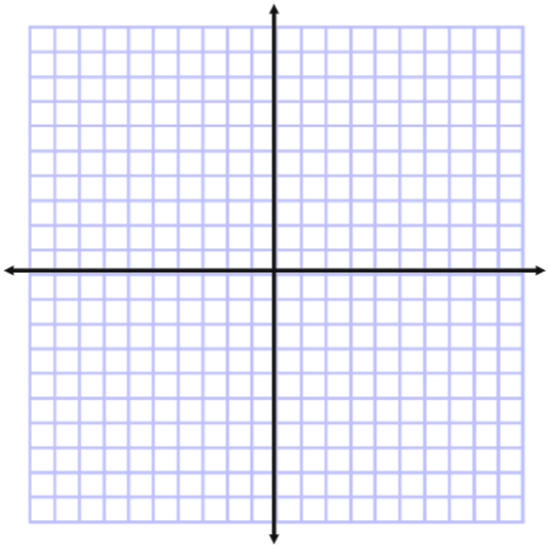
Skills

- 1-4a - Write the slope-intercept equation for a line by evaluating its graph.
- 1-4b - Write the slope-intercept equation of a line given a point and slope.
- 1-4c - Write the slope-intercept equation of a line given two points.
- 1-4d - Write the equations of vertical and horizontal lines.
- 1-4e - Determine whether a pair of lines are parallel, perpendicular or neither.
- 1-4f - Find the equation of a line that is parallel or perpendicular to another line.
- 1-4g - Determine the linear regression equation for a set of data.

Introduction

$y = mx + b$

Parallel and Perpendicular Lines



Example 1

7)

Example 2	13)

Example 3a	Example 3b
19)	

Example 4

35)

39)

Example 5

35)

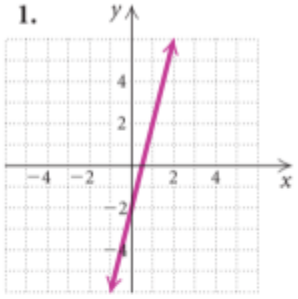
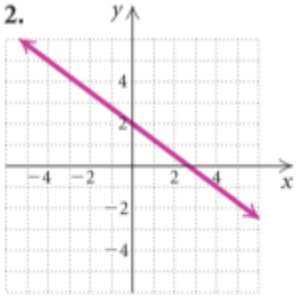
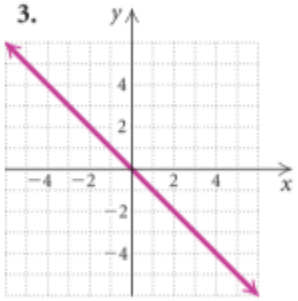
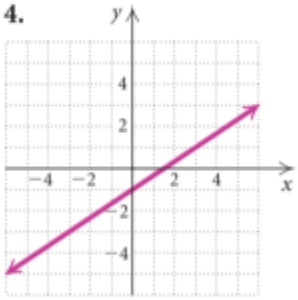
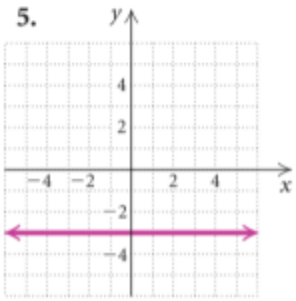
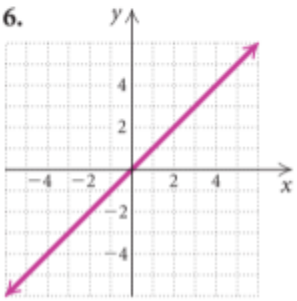
39)

Example 6

61)

Ch.1-4 - EXTRA PRACTICE

Extra Practice for 1.4a on p.118 #1-6 - Follow the instructions in the book and complete the problems.

Find the slope and the y-intercept of the graph of the linear equation. Then write the equation of the line in slope–intercept form. **1.**  **2.**  **3.**  **4.**  **5.**  **6.** 	1) 2) 3) 4) 5) 6)

Extra Practice for 1.4b on p.118 #7-18 - Follow the instructions in the book and complete the problems.

Extra Practice for 1.4c on p.118 #19-26, 31-34 - Follow the instructions in the book and complete the problems.

Extra Practice for 1.4d on p.118 #27-30 - Follow the instructions in the book and complete the problems.

Extra Practice for 1.4e on p.118 #35-42 - Follow the instructions in the book and complete the problems.

Extra Practice for 1.4f on p.118 #43-50 - Follow the instructions in the book and complete the problems.

Extra Practice for 1.4g on p.118 #61-66 - Follow the instructions in the book and complete the problems.

61. *Internet Use.* The table below illustrates the world growth in Internet use.

a) Model the data with a linear function. Let the independent variable represent the number of years after 2001; that is, the data points are (0, 494.1), (3, 935.0), and so on. Answers may vary depending on the data points used.

b) Using the function found in part (a), estimate the number of world Internet users in 2012 and in 2015.

Year, x	Number of World Internet Users, y (in millions)
2001, 0	494.1
2002, 1	679.8
2003, 2	790.1
2004, 3	935.0
2005, 4	1047.9
2006, 5	1217.0
2007, 6	1402.1
2008, 7	1542.5

Sources: International Telecommunication Union; ICT Indicators Database

63. *Ski Sales.* The table below illustrates how the sales of snow skis has declined in recent years. Model the data and use the model to estimate the sales of snow skis in 2012–2013. Answers may vary depending on the data points used.

Season, x	Snow Ski[1] Sales, y (in thousands)
2004–2005, 0	539
2005–2006, 1	505
2006–2007, 2	475
2007–2008, 3	464
2008–2009, 4	414

[1]Flat and systems
Source: SIA Retail Audit

65. *Credit-Card Debt.* Model the data given in the table below with a linear function, and estimate the average credit-card debt per U.S. household in 2005 and in 2014. Answers may vary depending on the data points used.

Year, x	Credit-Card Debt per Household, y
1992, 0	$ 3,803
1996, 4	6,912
2000, 8	8,308
2004, 12	9,577
2008, 16	10,691

Source: CardTrak.com

IXL PRACTICE

IXL - A1-L.5 - Slope-intercept form: write an equation from a graph

Date				Final
Grade				
Initials				

1.4a

IXL - A1-L.6 - Slope-intercept form: write an equation

Date				Final
Grade				
Initials				

1.4b

IXL - A1-L.7 - Slope-intercept form: write an equation from a table

Date				Final
Grade				
Initials				

1.4c

IXL - A1-L.12 - Equations of horizontal and vertical lines

Date				Final
Grade				
Initials				

1.4d

IXL - A1- L.13 - Graph a horizontal or vertical line

Date				Final
Grade				
Initials				

1.4d

IXL - A1-L.18 - Slopes of parallel and perpendicular lines

Date				Final
Grade				
Initials				

1.4ef

IXL - A1- L.19 - Write an equation for a parallel or perpendicular line

Date				Final
Grade				
Initials				

1.4ef

IXL - A1-JJ.7 - Find the equation of a regression line

Date				Final
Grade				
Initials				

1.4g