

Name _____

Solve the problem.

- 1) Some values for a relation are given in the table. Is the relation a function?

x	y
1	2
2	5
3	8
3	11
4	14

- 2) Some values for a relation are given in the table. Is the relation a function?

x	y
5	3
6	4
7	6
8	6
9	15

- 3) Some values for a relation are given in the table. Is the relation a function?

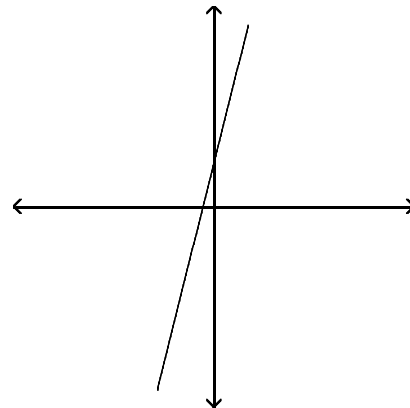
x	y
1	5
2	9
3	2
3	4
4	7

- 4) Some values for a relation are given in the table. Is the relation a function?

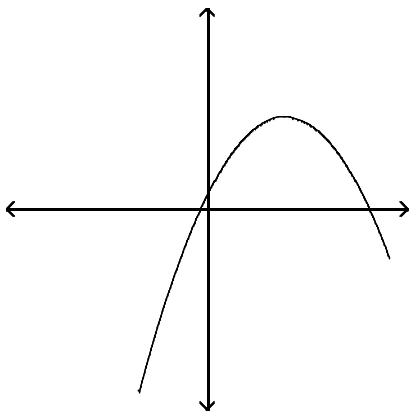
x	y
1	2
2	7
3	7
4	1
5	9

Determine whether the graph is the graph of a function.

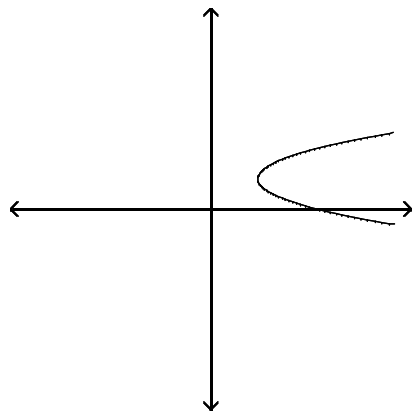
- 5)



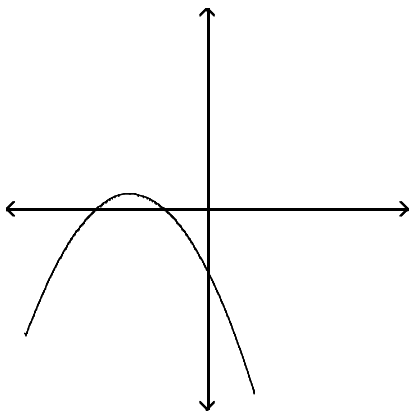
6)



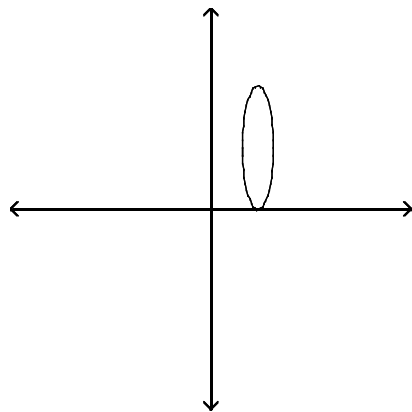
9)



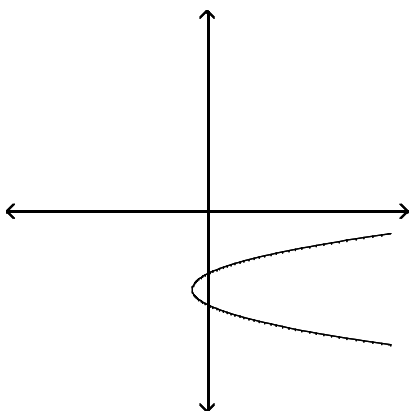
7)



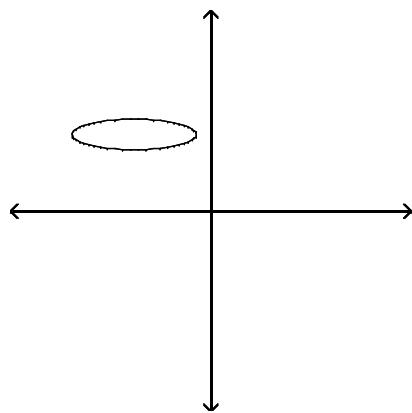
10)



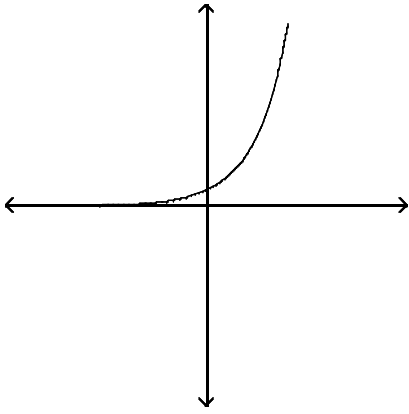
8)



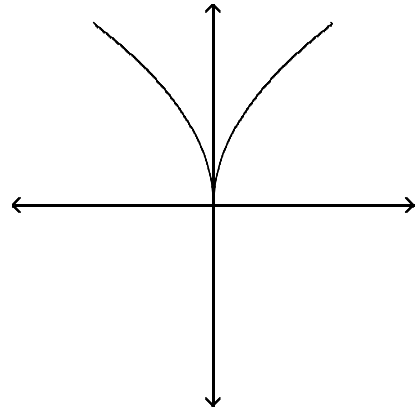
11)



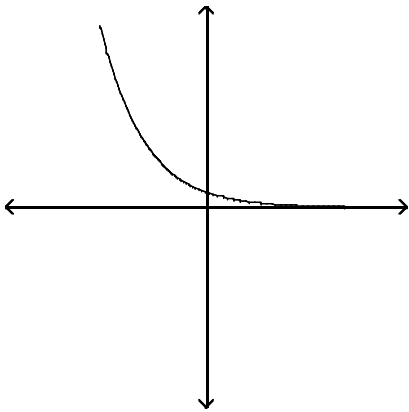
12)



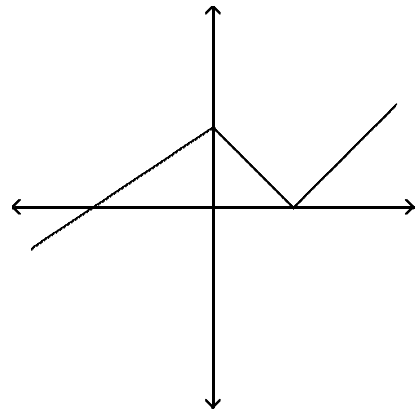
15)



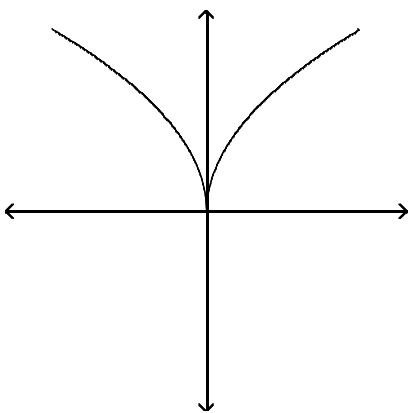
13)



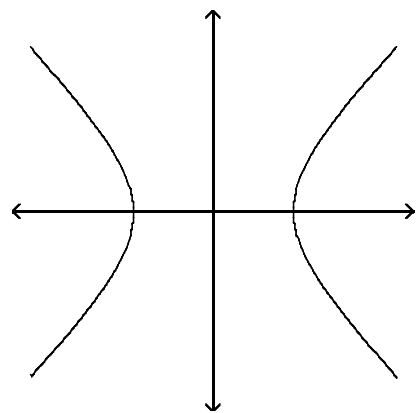
16)



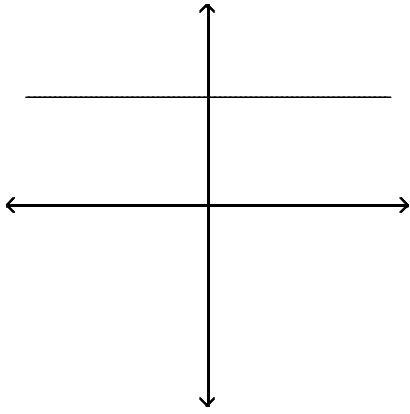
14)



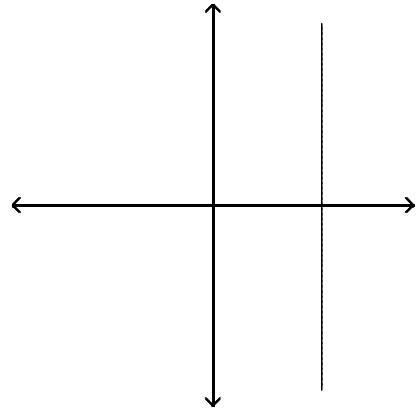
17)



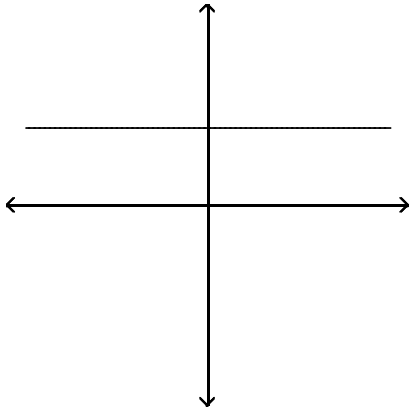
18)



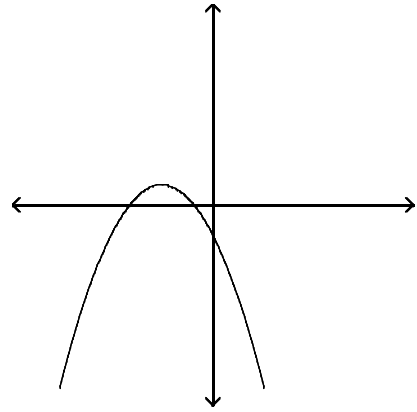
21)



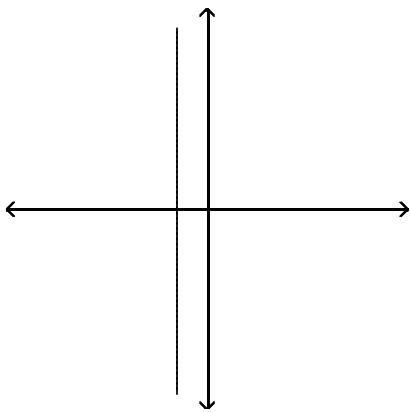
19)



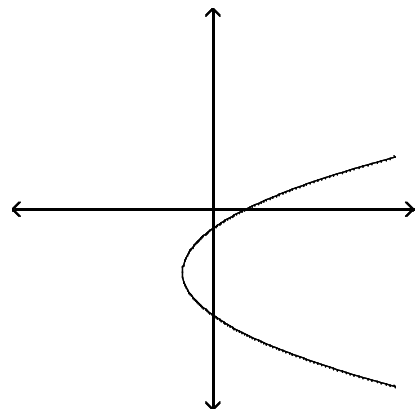
22)



20)



23)



Decide whether the relation defines a function.

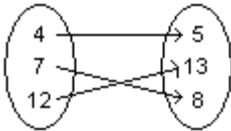
24) $\{(-3, 7), (3, 3), (4, -8), (7, 1), (10, 3)\}$

25) $\{(-6, 1), (-3, -6), (3, -5), (3, 5)\}$

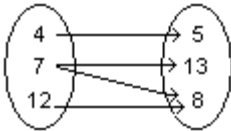
26) $\{(-8, 2), (-8, 8), (-1, 8), (6, -6), (10, 6)\}$

27) $\{(-6, -8), (-3, -2), (4, -5), (8, -3)\}$

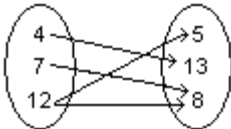
28)



29)



30)



31) Student Test Score

Name	Test Score
Bob L.	72
Susan H.	83
Jim H.	76
Bruce B.	96

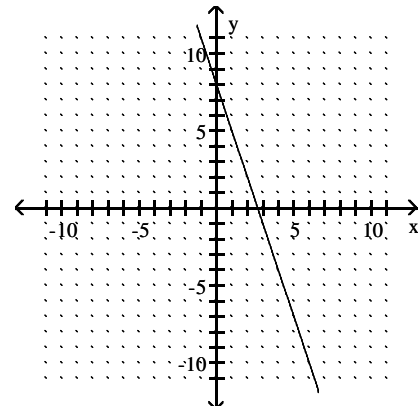
32) Student Test Score

Name	Test Score
Bob L.	79
Susan H.	83
Jim H.	79
Bruce B.	96

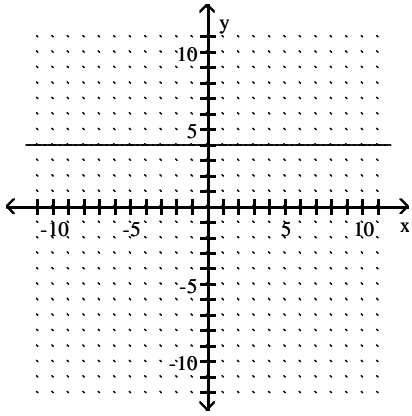
33) Annual New Telemarketing Companies

Year	Number
1995	26
1996	52
1997	127
1998	88
1999	228

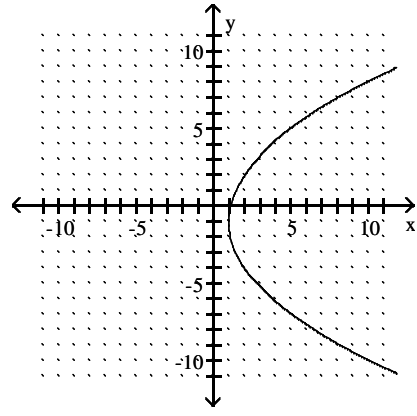
34)



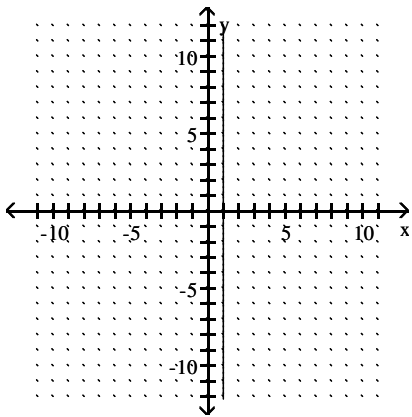
35)



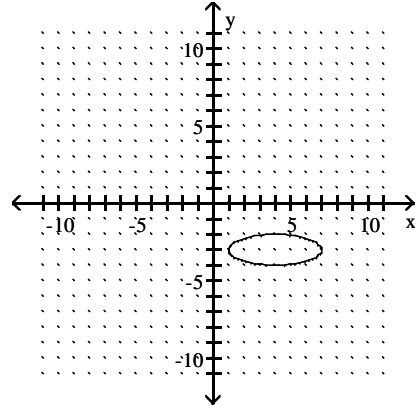
38)



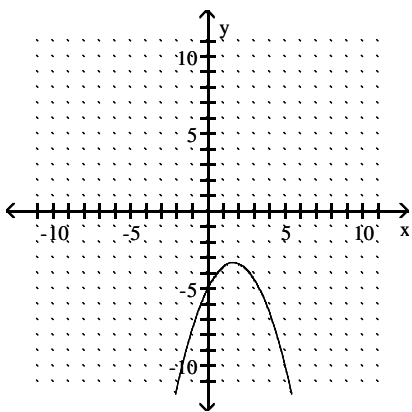
36)



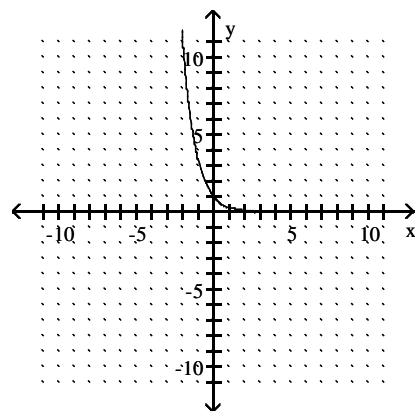
39)



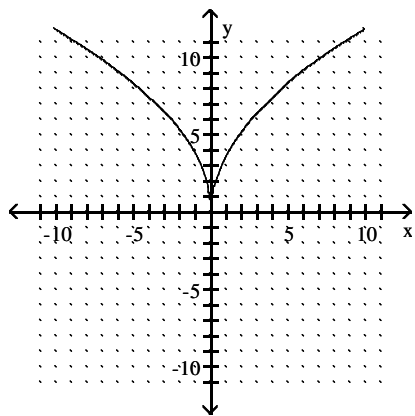
37)



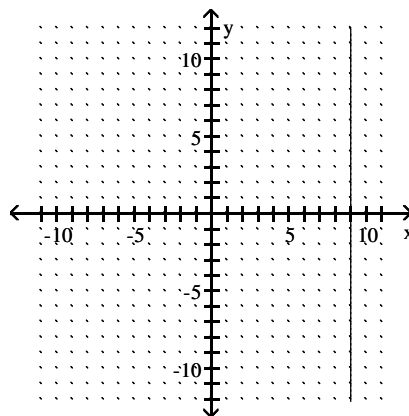
40)



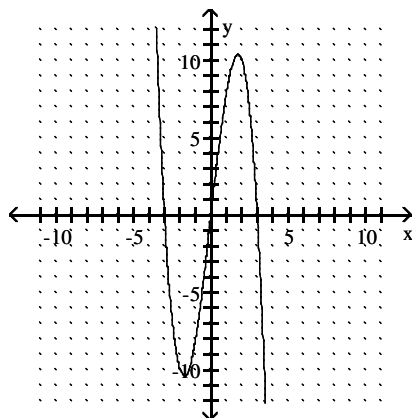
41)



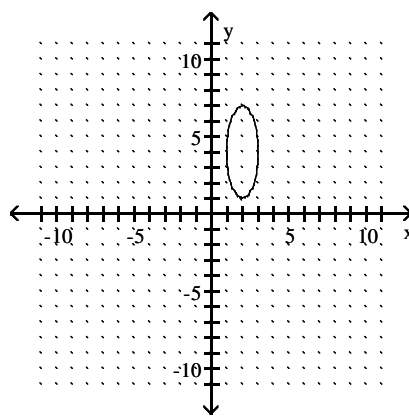
44)



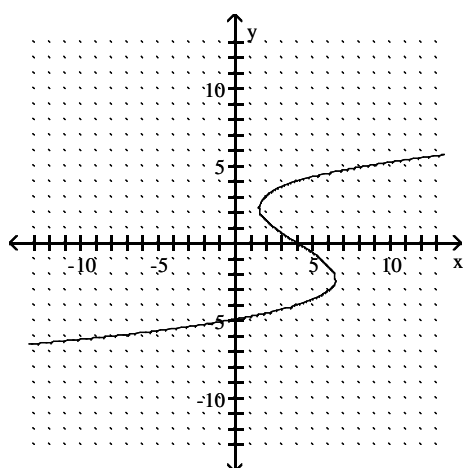
42)



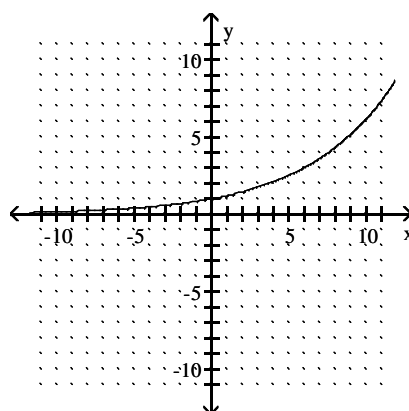
45)



43)



46)



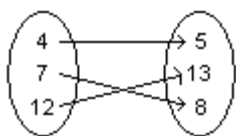
47) $\{(-3, 5), (2, 9), (5, -7), (7, -1), (11, 6)\}$

48) $\{(-7, 1), (-3, -6), (3, -2), (3, 6)\}$

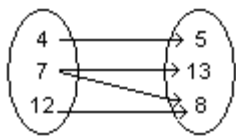
49) $\{(-8, 2), (-8, 8), (-1, -4), (3, 7), (8, -8)\}$

50) $\{(-4, 5), (-3, -4), (3, 8), (5, 2)\}$

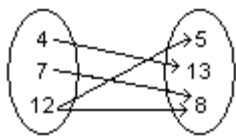
51)



52)



53)



54) Student Test Score

Name	Test Score
Bob L.	87
Susan H.	83
Jim H.	76
Bruce B.	96

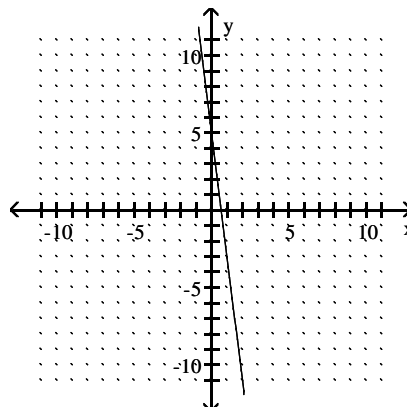
55) Student Test Score

Name	Test Score
Bob L.	83
Susan H.	83
Jim H.	83
Bruce B.	96

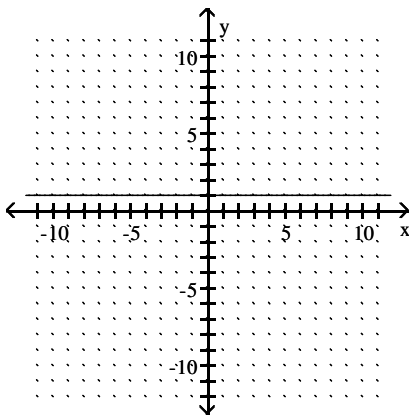
56) Annual New Telemarketing Companies

Year	Number
1995	38
1996	76
1997	151
1998	124
1999	264

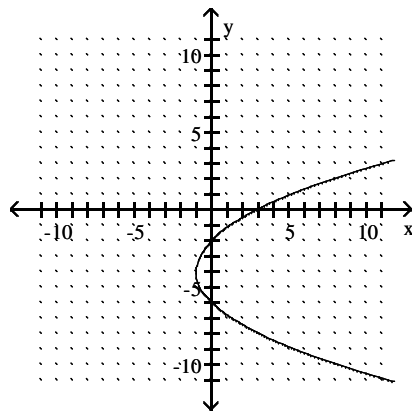
57)



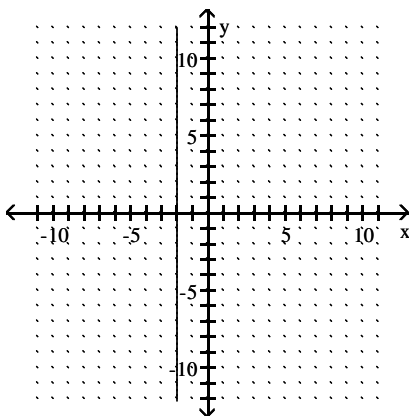
58)



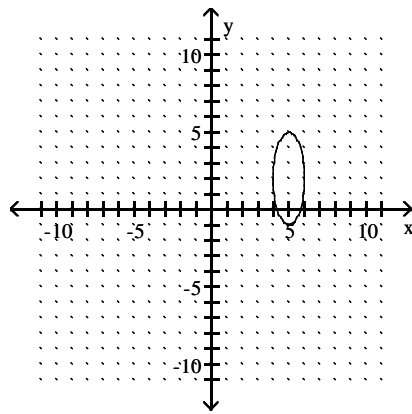
61)



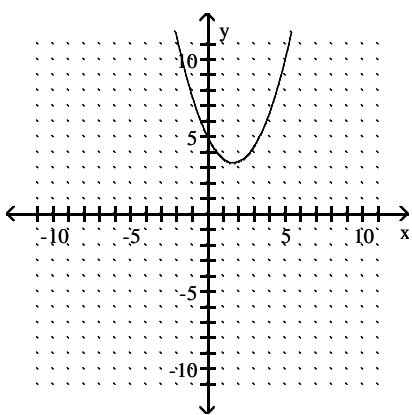
59)



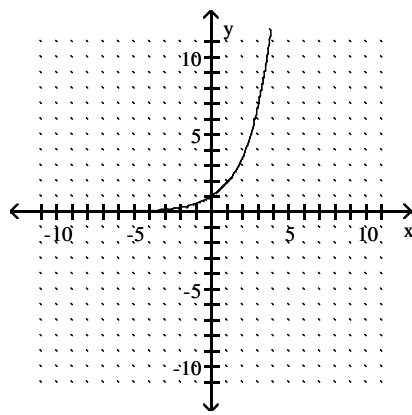
62)



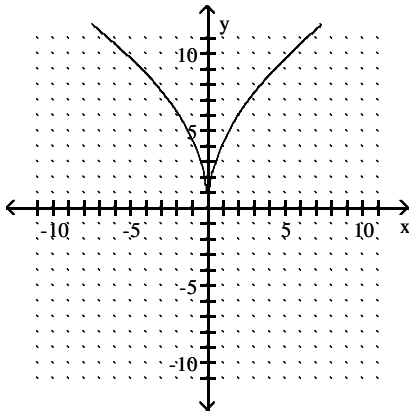
60)



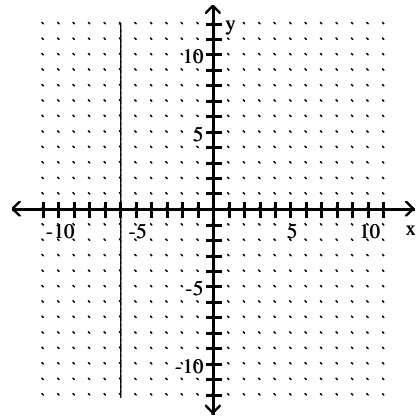
63)



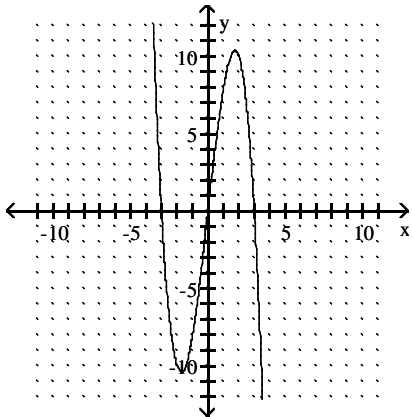
64)



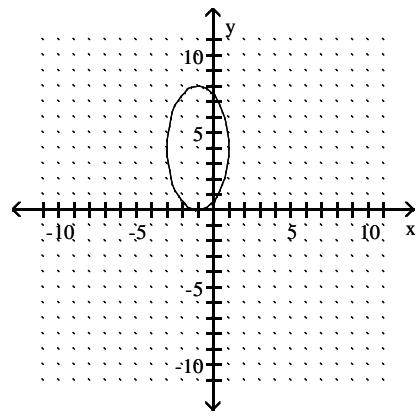
67)



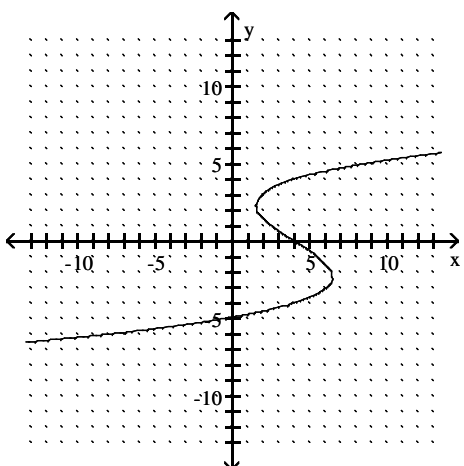
65)



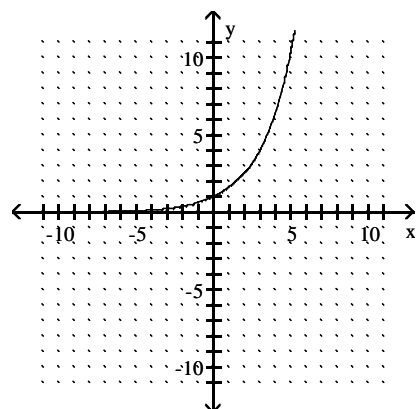
68)



66)



69)



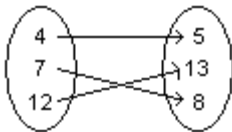
Give the domain and range of the relation.

70) $\{(3, 9), (-2, -9), (-6, -4), (4, 0)\}$

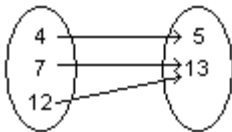
71) $\{(2, 9), (-2, -9), (-6, -5), (4, -9)\}$

72) $\{(1, 1), (-1, -1), (-7, -7), (6, 6)\}$

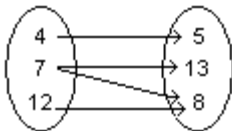
73)



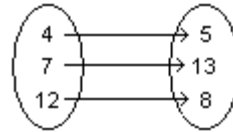
74)



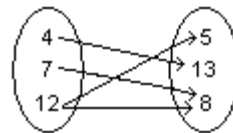
75)



76)



77)



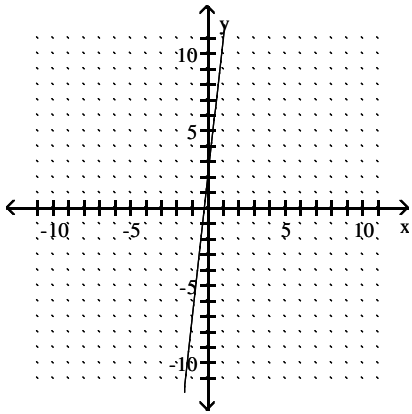
78) Annual New Telemarketing Companies

Year	Number
1995	56
1996	112
1997	187
1998	178
1999	318

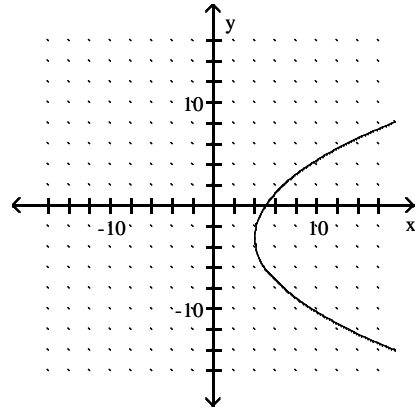
79) Annual New Telemarketing Companies

Year	Number
1993	52
1994	102
1995	187
1996	170
1997	218

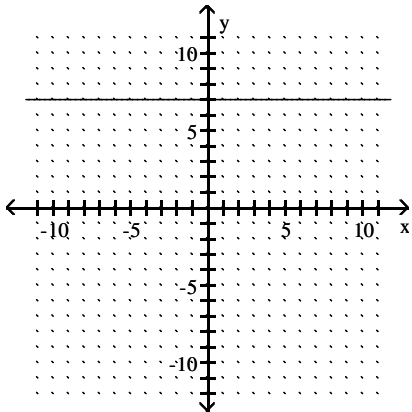
80)



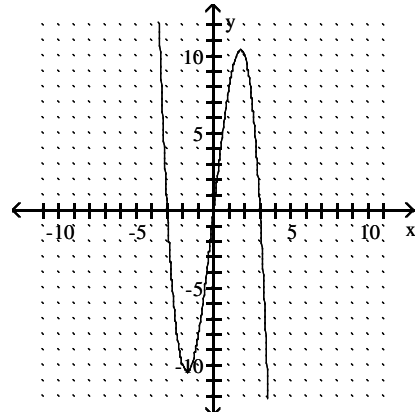
83)



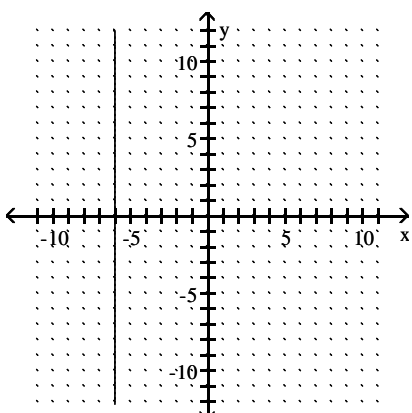
81)



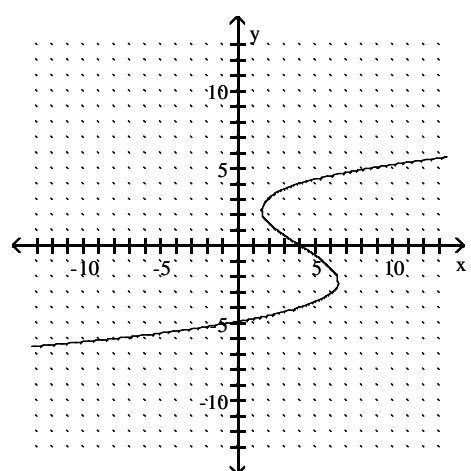
84)



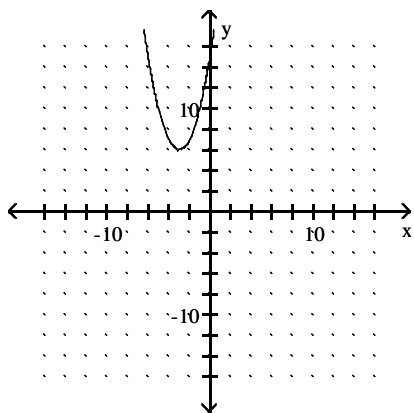
82)



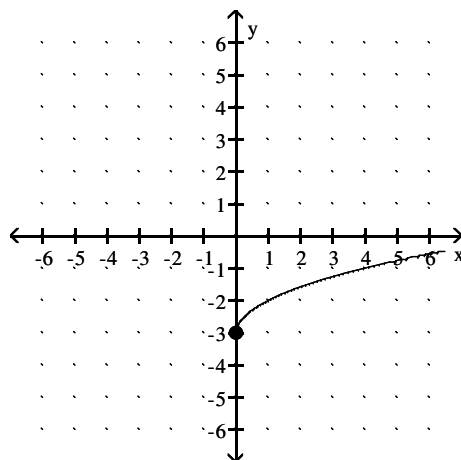
85)



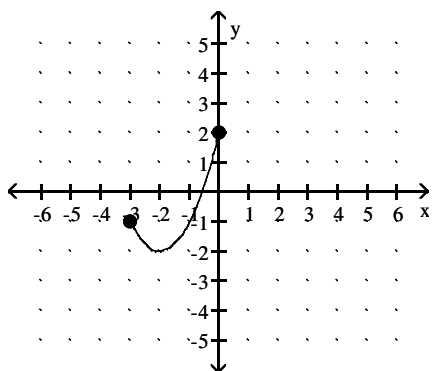
86)



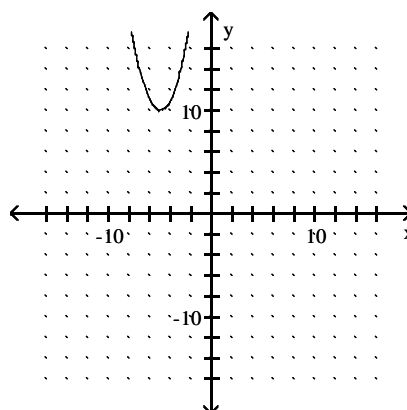
89)



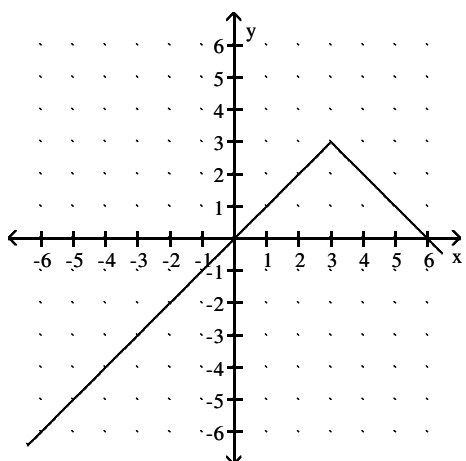
87)



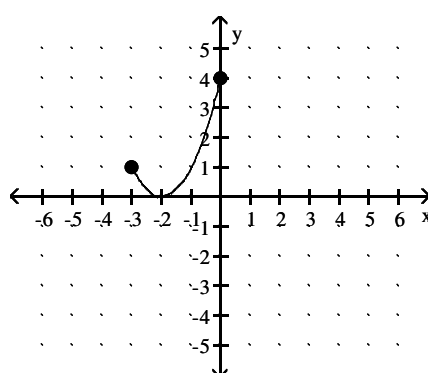
90)



88)



91)



Determine whether the function is a one-to-one function.

92) $f = \{(-7, -15), (19, 17), (-17, -10)\}$

93) $f = \{(4, 14), (-11, -14), (-5, -20)\}$

94) $f = \{(-5, -5), (-4, -5), (-3, -7), (-2, 4)\}$

95) $f = \{(-2, 9), (2, -9), (-6, -7), (6, 7)\}$

96) $f = \{(7, 6), (-7, -6), (-9, -4), (9, 4)\}$

97) $f = \{(6, -6), (-4, -5), (-6, -4), (-8, -3)\}$

98) $f = \{(6, -4), (-3, -3), (-5, -2), (-7, -1)\}$

99) $f = \{(2, 2), (-2, -2), (1, -6), (-1, 6)\}$

100) $f = \{(2, 2), (-2, -2), (-9, -1), (9, 1)\}$

101) $f = \{(-3, 16), (-20, 16), (16, -20)\}$

102) $f = \{(-9, 6), (-1, 6), (5, -15)\}$

103) $f = \{(-9, -1), (-8, -1), (-7, -7), (-6, -4)\}$

104) $f = \{(5, -9), (6, -9), (7, -1), (8, -2)\}$

105)

Month of 1999 (input)	Jan	Feb	Mar	Apr
Sales of Product B (output)	3466	4027	3092	3840

106)

Weekdays (input)	Monday	Tuesday	Wed
Student: Avg. Minutes of Study(output)	247	321	.

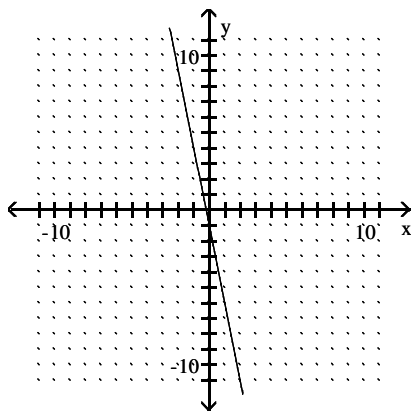
107) $f = \{(9, 9), (10, 9), (11, -2), (12, 6)\}$

108) $f = \{(6, 5), (-1, 6), (-3, 7), (-5, 8)\}$

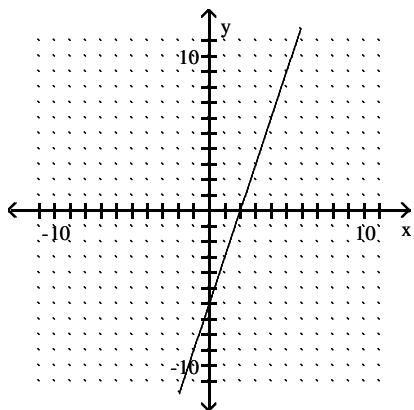
109) $f = \{(7, 8), (-8, -7), (-5, -3), (5, 3)\}$

Determine whether the graph of the function is the graph of a one-to-one function. (Use Horizontal Line Test!)

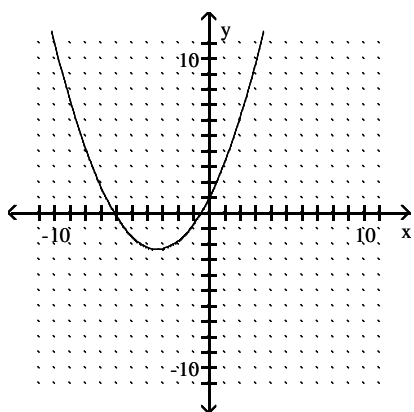
110)



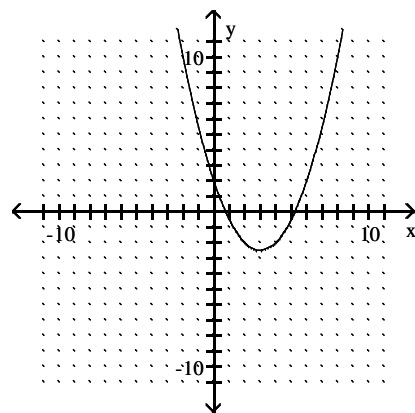
111)



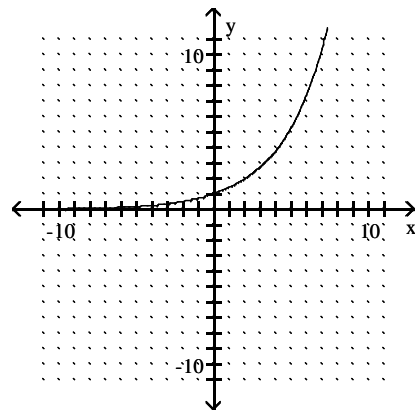
112)



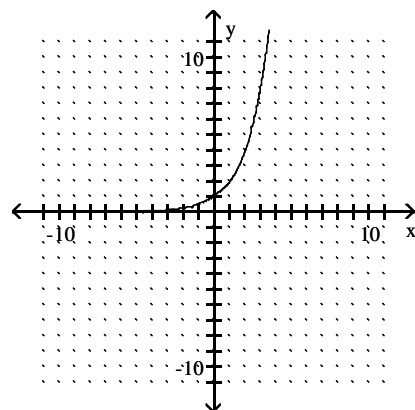
113)



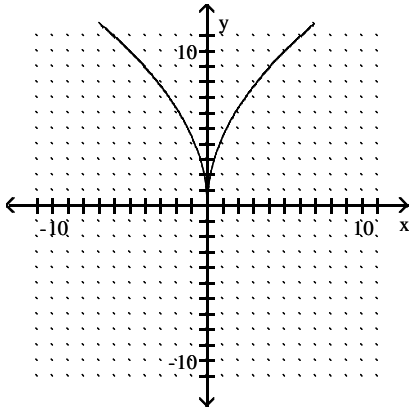
114)



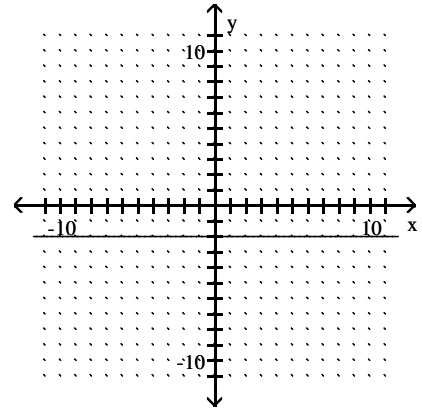
115)



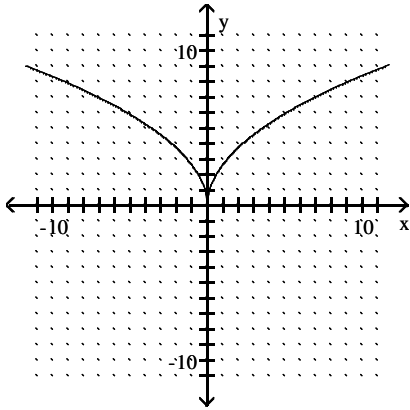
116)



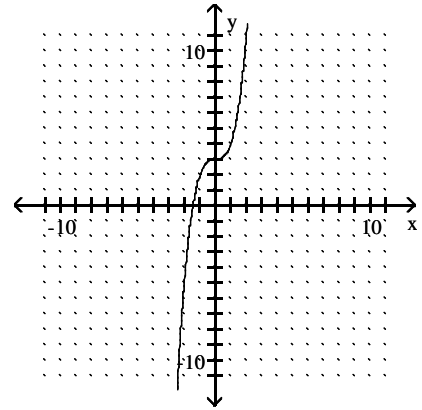
119)



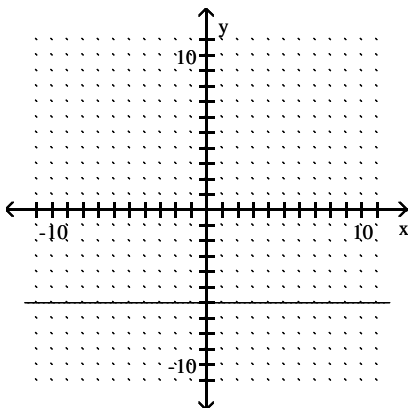
117)



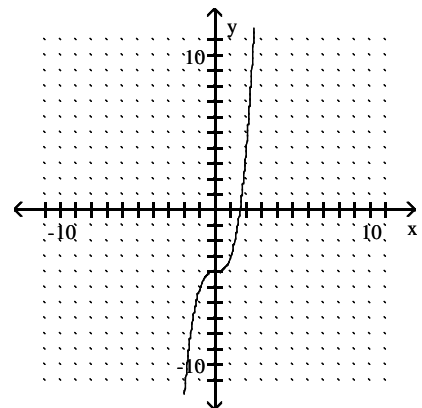
120)



118)



121)



If the function is one-to-one, list the inverse function by switching coordinates or inputs and outputs.

122) $f = \{(-1, 17), (-8, -1), (5, 18)\}$

123) $f = \{(-16, -7), (-15, -10), (-12, -3)\}$

124) $f = \{(-7, 1), (7, -1), (-3, 1), (3, -1)\}$

125) $f = \{(8, -3), (-8, 3), (-5, 5), (5, -5)\}$

126) $f = \{(6, 3), (8, 4), (6, 5), (4, 6)\}$

127) $f = \{(6, -8), (11, -7), (9, -6), (7, -5)\}$

128) $f = \{(-3, 5), (-5, 3), (2, -7), (-2, 7)\}$

129) $f = \{(8, 5), (-5, -8), (3, -7), (-3, 7)\}$

130) $f = \{(1, -4), (4, -1), (-3, 3), (3, -3)\}$

131)

Weekdays (input)	Mon.	Tue.	Wed.	Thu.	Fri.
Student: Avg.					
Minutes of Study (output)	386	330	181	330	386

132)

Weekdays (input)	Mon.	Tue.	Wed.	Thu.	Fri.
Student: Avg.					
Minutes of Study (output)	389	327	189	327	389

133)

Month of 1999 (input)	Jan	Feb	Mar	Apr
Sales of Product A (output)	5050	5153	5462	5874

134)

Month of 1999 (input)	Jan	Feb	Mar	Apr
Sales of Product A (output)	5074	5242	5746	6418

135) $f = \{(-5, -4), (5, 4), (-5, 6), (5, -6)\}$

136) $f = \{(6, -11), (9, -10), (7, -9), (5, -8)\}$

Find the inverse of the one-to-one function.

$$137) f(x) = 5x + 6$$

$$138) f(x) = 3x + 5$$

$$139) f(x) = 4x + 8$$

$$140) f(x) = x^3 + 8$$

$$141) f(x) = x^3 + 4$$

$$142) f(x) = \frac{2x - 5}{3}$$

$$143) f(x) = \frac{3x + 5}{8}$$

$$144) f(x) = \sqrt[3]{x + 4}$$

$$145) f(x) = \sqrt[3]{x - 6}$$

$$146) f(x) = \frac{3}{2x + 5}$$

$$147) f(x) = \frac{7}{2x + 3}$$

$$148) f(x) = (x + 6)^3 + 5$$

$$149) f(x) = (x + 6)^3 + 7$$

$$150) f(x) = 2x + 3$$

$$151) f(x) = x^3 + 6$$

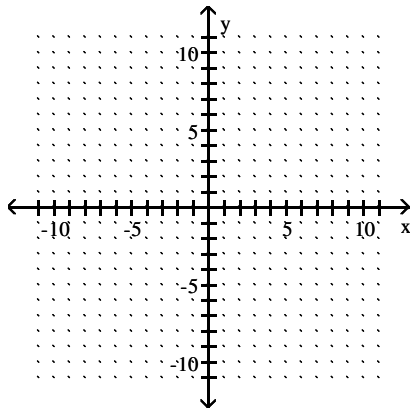
$$152) f(x) = \frac{8x + 1}{7}$$

$$153) f(x) = \frac{7}{3x + 8}$$

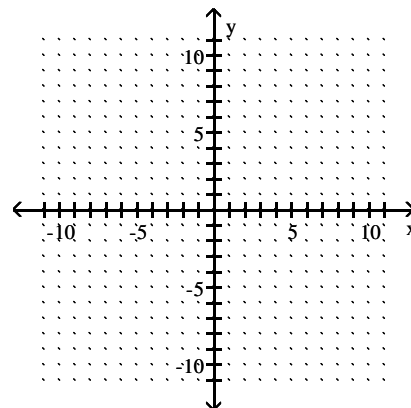
$$154) f(x) = \frac{5}{7x + 4}$$

Graph the function and its inverse on the same set of axes.

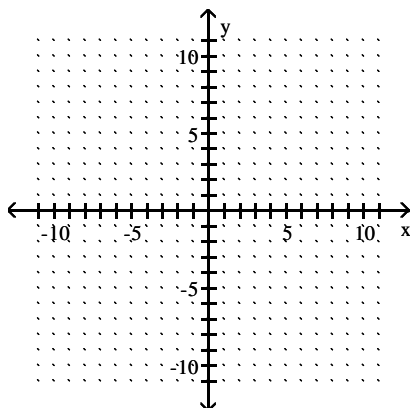
155) $f(x) = 3x$



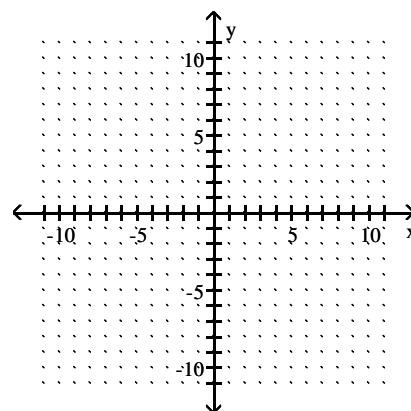
157) $f(x) = \frac{1}{2}x - 3$



156) $f(x) = 2x - 2$

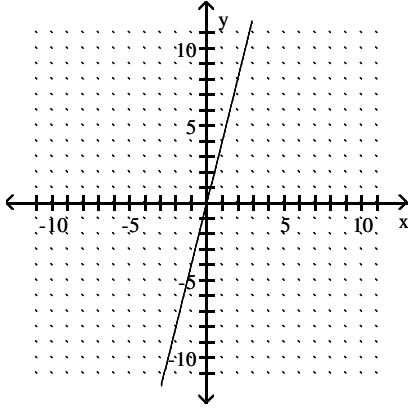


158) $f(x) = x^3 + 2$

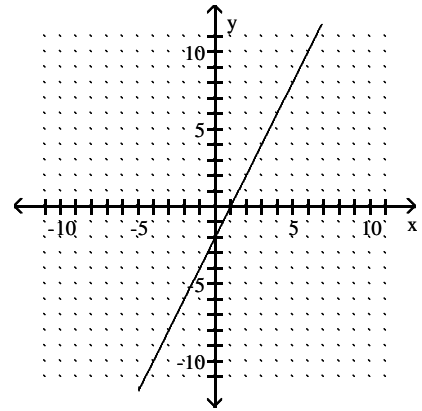


Graph the inverse of the function on the same set of axes.

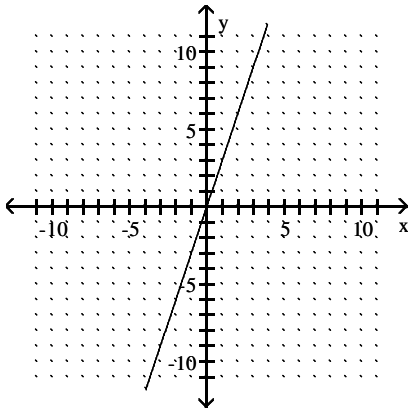
159)



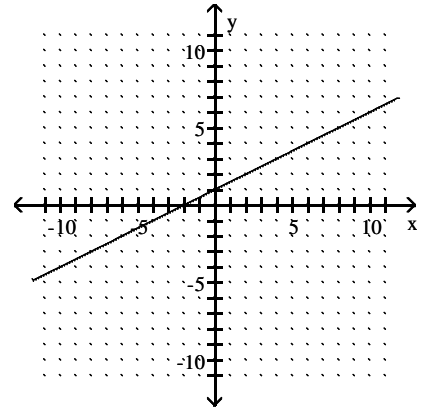
162)



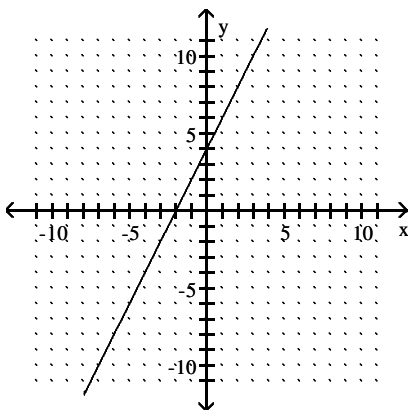
160)



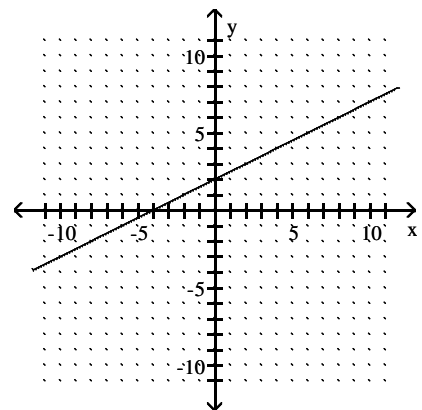
163)



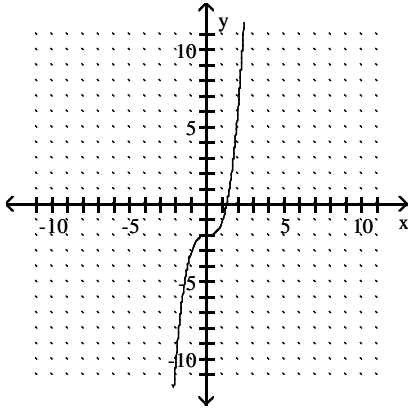
161)



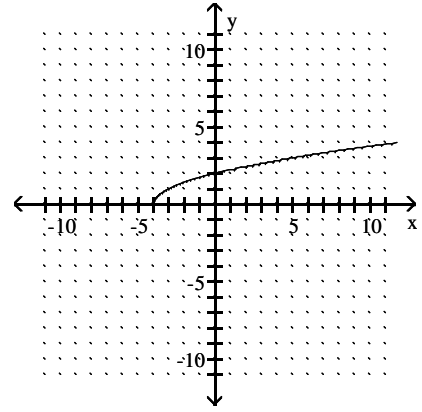
164)



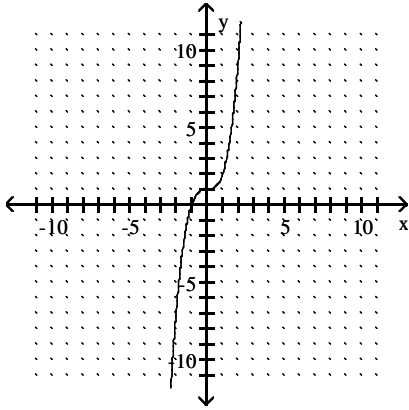
165)



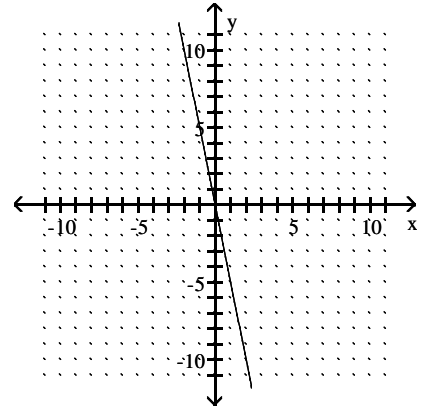
168)



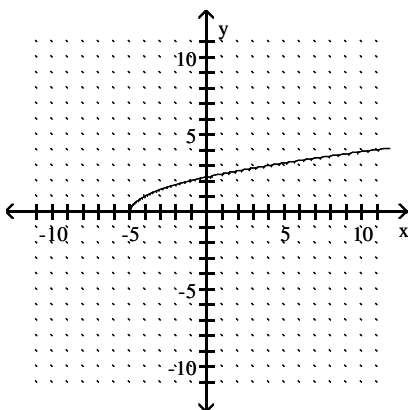
166)



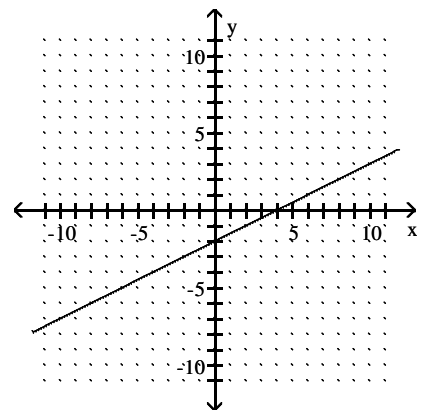
169)



167)



170)



Answer Key

Testname: WORKSHEET 8.2A_FINDINGTHEINVERSERELATION_V02

- 1) No
- 2) Yes
- 3) No
- 4) Yes
- 5) function
- 6) function
- 7) function
- 8) not a function
- 9) not a function
- 10) not a function
- 11) not a function
- 12) function
- 13) function
- 14) function
- 15) function
- 16) function
- 17) not a function
- 18) function
- 19) function
- 20) not a function
- 21) not a function
- 22) function
- 23) not a function
- 24) Function
- 25) Not a function
- 26) Not a function
- 27) Function
- 28) Function
- 29) Not a function
- 30) Not a function
- 31) Function
- 32) Function
- 33) Function
- 34) Function
- 35) Function
- 36) Not a function
- 37) Function
- 38) Not a function
- 39) Not a function
- 40) Function
- 41) Function
- 42) Function
- 43) Not a function
- 44) Not a function
- 45) Not a function
- 46) Function
- 47) Function
- 48) Not a function
- 49) Not a function
- 50) Function

Answer Key

Testname: WORKSHEET 8.2A_FINDINGTHEINVERSERELATION_V02

- 51) Function
- 52) Not a function
- 53) Not a function
- 54) Function
- 55) Function
- 56) Function
- 57) Function
- 58) Function
- 59) Not a function
- 60) Function
- 61) Not a function
- 62) Not a function
- 63) Function
- 64) Function
- 65) Function
- 66) Not a function
- 67) Not a function
- 68) Not a function
- 69) Function
- 70) domain: $\{-6, -2, 3, 4\}$; range: $\{-9, -4, 0, 9\}$
- 71) domain: $\{-6, -2, 2, 4\}$; range: $\{-9, -5, 9\}$
- 72) domain: $\{-7, -1, 1, 6\}$; range: $\{-7, -1, 1, 6\}$
- 73) domain: $\{4, 7, 12\}$; range: $\{5, 8, 13\}$
- 74) domain: $\{4, 7, 12\}$; range: $\{5, 13\}$
- 75) domain: $\{4, 7, 12\}$; range: $\{5, 8, 13\}$
- 76) domain: $\{4, 7, 12\}$; range: $\{5, 8, 13\}$
- 77) domain: $\{5, 8, 13\}$; range: $\{4, 7, 12\}$
- 78) domain: $\{1995, 1996, 1997, 1998, 1999\}$; range: $\{56, 112, 178, 187, 318\}$
- 79) domain: $\{1993, 1994, 1995, 1996, 1997\}$; range: $\{52, 102, 170, 187, 218\}$
- 80) domain: $(-\infty, \infty)$; range: $(-\infty, \infty)$
- 81) domain: $(-\infty, \infty)$; range: $\{7\}$
- 82) domain: $\{-6\}$; range: $(-\infty, \infty)$
- 83) domain: $[4, \infty)$; range: $(-\infty, \infty)$
- 84) range: $(-\infty, \infty)$; domain: $(-\infty, \infty)$
- 85) range: $(-\infty, \infty)$; domain: $(-\infty, \infty)$
- 86) domain: $(-\infty, \infty)$; range: $[6, \infty)$
- 87) domain: $[-3, 0]$; range: $[-2, 2]$
- 88) domain: $(-\infty, \infty)$; range: $(-\infty, 3]$
- 89) domain: $[0, \infty)$; range: $[-3, \infty)$
- 90) domain: $(-\infty, \infty)$; range: $[10, \infty)$
- 91) domain: $[-3, 0]$; range: $[-0, 4]$
- 92) one-to-one
- 93) one-to-one
- 94) not one-to-one
- 95) one-to-one
- 96) one-to-one
- 97) one-to-one
- 98) one-to-one
- 99) one-to-one
- 100) one-to-one

Answer Key

Testname: WORKSHEET 8.2A_FINDINGTHEINVERSERELATION_V02

101) not one-to-one

102) not one-to-one

103) not one-to-one

104) not one-to-one

105) not one-to-one

106) one-to-one

107) not one-to-one

108) one-to-one

109) one-to-one

110) Yes

111) Yes

112) No

113) No

114) Yes

115) Yes

116) No

117) No

118) No

119) No

120) Yes

121) Yes

122) $f^{-1} = \{(17, -1), (-1, -8), (18, 5)\}$

123) $f^{-1} = \{(-7, -16), (-10, -15), (-3, -12)\}$

124) $f^{-1} = \{(1, -7), (-1, 7), (1, -3), (-1, 3)\}$

125) $f^{-1} = \{(-3, 8), (3, -8), (5, -5), (-5, 5)\}$

126) $f^{-1} = \{(3, 6), (4, 8), (5, 6), (6, 4)\}$

127) $f^{-1} = \{(-8, 6), (-7, 11), (-6, 9), (-5, 7)\}$

128) $f^{-1} = \{(5, -3), (3, -5), (-7, 2), (7, -2)\}$

129) $f^{-1} = \{(5, 8), (-8, -5), (-7, 3), (7, -3)\}$

130) $f^{-1} = \{(-4, 1), (-1, 4), (3, -3), (-3, 3)\}$

131) not one-to-one

132) not one-to-one

133)

Sales of Product A (input)	5050	5153	5462	5874	5359	5565
Month of 1999 (output)	Jan	Feb	Mar	Apr	May	Jun

134)

Sales of Product A (input)	5074	5242	5746	6418	5578	5914
Month of 1999 (output)	Jan	Feb	Mar	Apr	May	Jun

135) $f^{-1} = \{(-4, -5), (4, 5), (6, -5), (-6, 5)\}$

136) $f^{-1} = \{(-11, 6), (-10, 9), (-9, 7), (-8, 5)\}$

137) $f^{-1}(x) = \frac{x-6}{5}$

138) $f^{-1}(x) = \frac{x-5}{3}$

Answer Key

Testname: WORKSHEET 8.2A_FINDINGTHEINVERSERELATION_V02

139) $f^{-1}(x) = \frac{x-8}{4}$

140) $f^{-1}(x) = \sqrt[3]{x-8}$

141) $f^{-1}(x) = \sqrt[3]{x-4}$

142) $f^{-1}(x) = \frac{3x+5}{2}$

143) $f^{-1}(x) = \frac{8x-5}{3}$

144) $f^{-1}(x) = x^3 - 4$

145) $f^{-1}(x) = x^3 + 6$

146) $f^{-1}(x) = \frac{3}{2x} - \frac{5}{2}$

147) $f^{-1}(x) = \frac{7}{2x} - \frac{3}{2}$

148) $f^{-1}(x) = \sqrt[3]{x-5} - 6$

149) $f^{-1}(x) = \sqrt[3]{x-7} - 6$

150) $f^{-1}(x) = \frac{x-3}{2}$

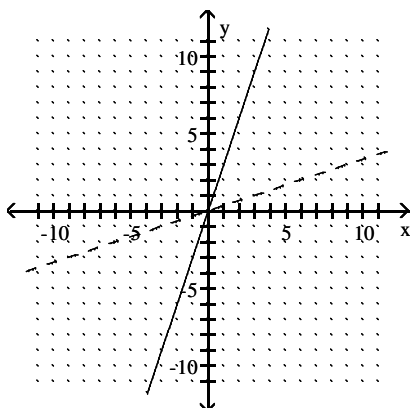
151) $f^{-1}(x) = \sqrt[3]{x-6}$

152) $f^{-1}(x) = \frac{7x-1}{8}$

153) $f^{-1}(x) = \frac{7}{3x} - \frac{8}{3}$

154) $f^{-1}(x) = \frac{5}{7x} - \frac{4}{7}$

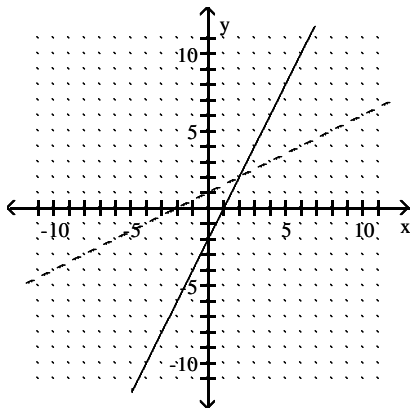
155)



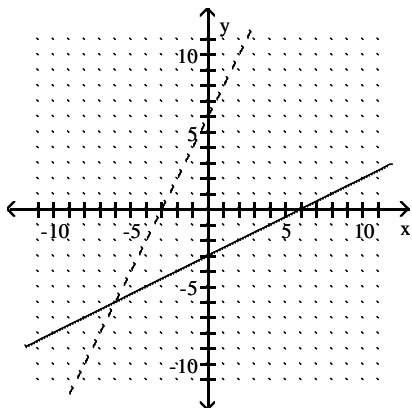
Answer Key

Testname: WORKSHEET 8.2A_FINDINGTHEINVERSERELATION_V02

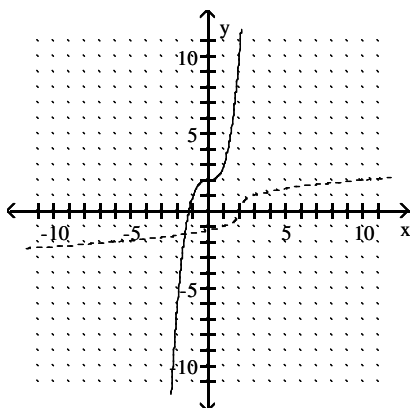
156)



157)



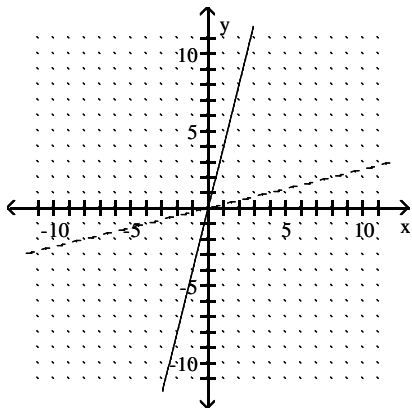
158)



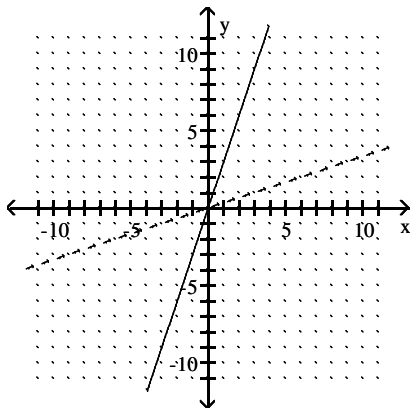
Answer Key

Testname: WORKSHEET 8.2A_FINDINGTHEINVERSERELATION_V02

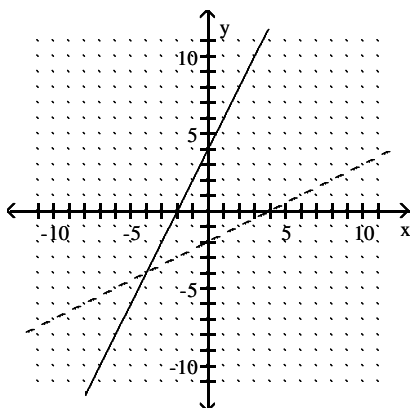
159)



160)



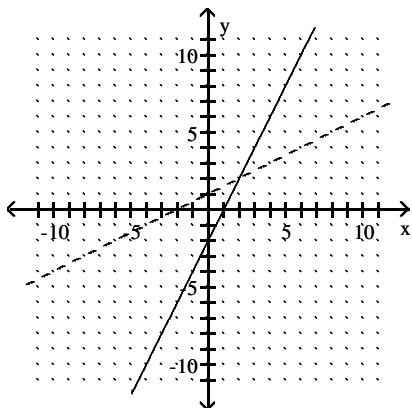
161)



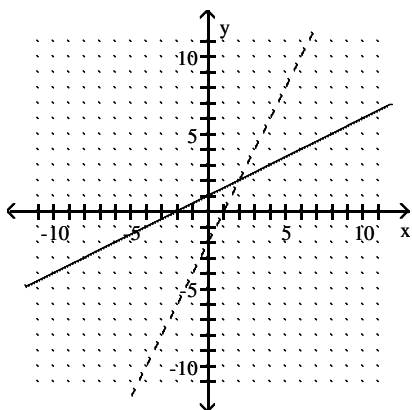
Answer Key

Testname: WORKSHEET 8.2A_FINDINGTHEINVERSERELATION_V02

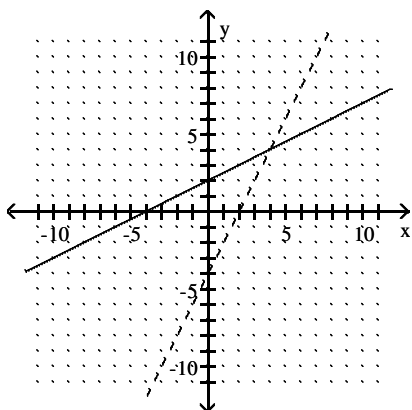
162)



163)



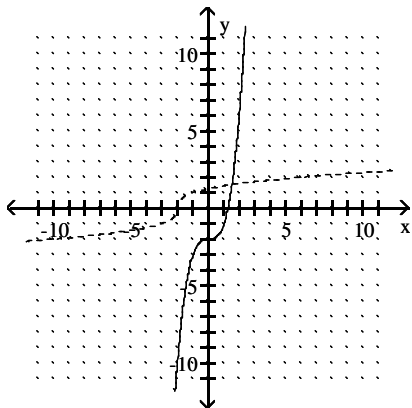
164)



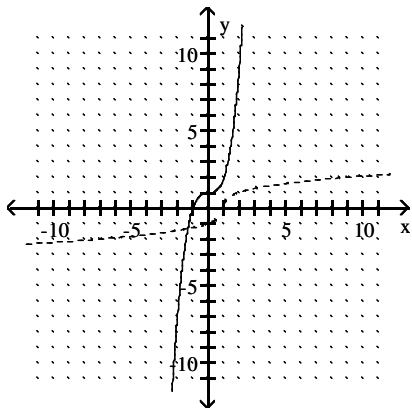
Answer Key

Testname: WORKSHEET 8.2A_FINDINGTHEINVERSERELATION_V02

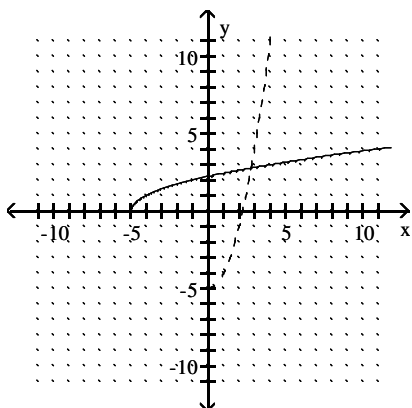
165)



166)



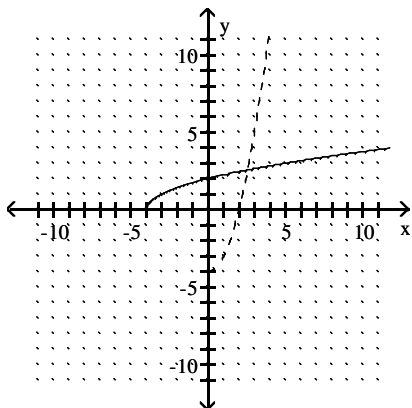
167)



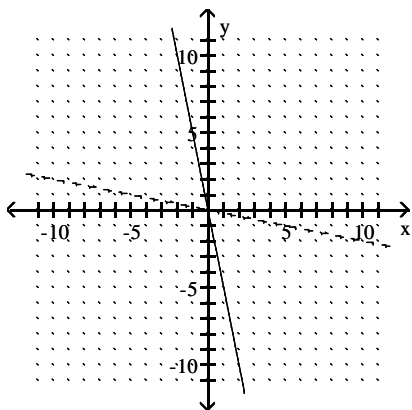
Answer Key

Testname: WORKSHEET 8.2A_FINDINGTHEINVERSERELATION_V02

168)



169)



170)

