Math 098 Exam 1 Preparation– 1.1 to 1.5, Ch 2.1, 2.2, 2.3, 2.5, 3.1, & 3.5 v01
NO BOOK/ NO NOTES/YES CALCUATOR
Dressler Fall 2017

Name_____

Solve the equation.

1) $\frac{1}{4}x - \frac{3}{8}x = 2$ 1) _____

2) $\frac{1}{4}x - \frac{3}{8}x = 5$ 2) _____

3) $\frac{6}{7} + \frac{1}{8}x = 2$ 3) _____

4) $\frac{4}{5} + \frac{1}{6}x = 2$ 4) _____

5) $\frac{x}{2} - \frac{x}{3} = 5$ 5) _____

6) $\frac{x}{9} = \frac{x}{8} + \frac{10}{9}$ 6) _____

7) $\frac{x}{8} = \frac{x}{5} + \frac{7}{8}$ 7) _____

Find the measure of the indicated angle.

8) The angle's measure is 70° more than that of its complement. 8) _____

9) The angle's measure is 30° more than that of its complement. 9) _____

10) The angle's measure is 50° more than that of its complement. 10) _____

11) The angle's measure is 60° more than that of its complement. 11) _____

12) The angle's measure is 30° more than that of its supplement. 12) _____

13) The angle's measure is 70° more than that of its supplement. 13) _____

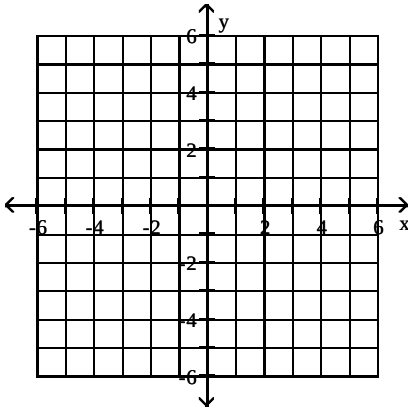
14) The angle's measure is 20° more than triple that of its supplement. 14) _____

15) The angle's measure is 60° more than triple that of its supplement. 15) _____

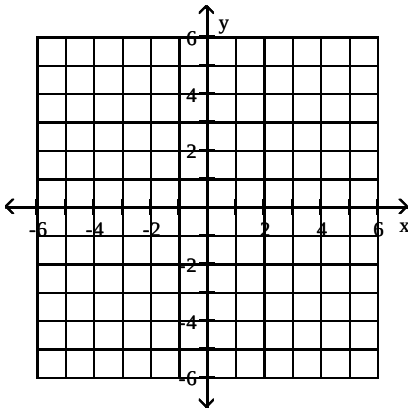
16) The angle's measure is 80° more than triple that of its supplement. 16) _____

Graph the equation.

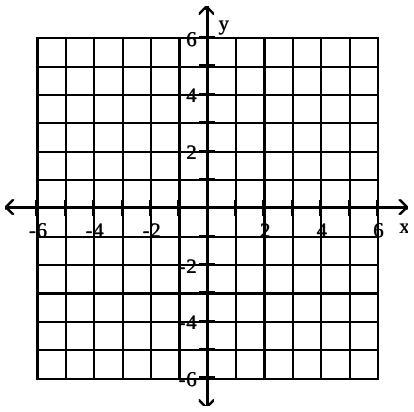
17) $y = x - 3$ 17) _____



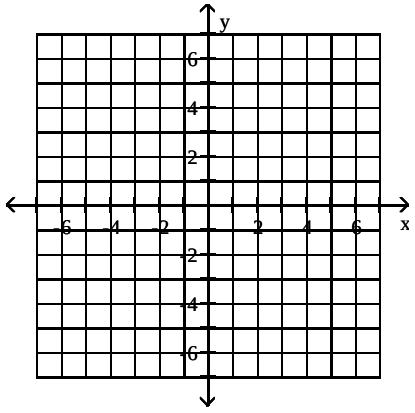
18) $y = x + 5$ 18) _____



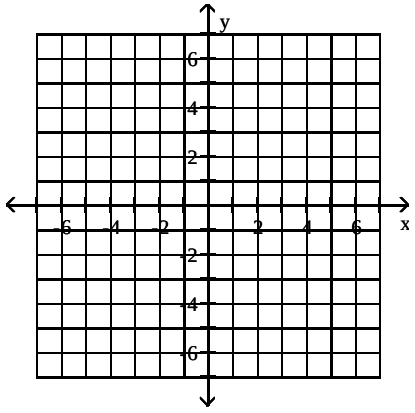
19) $y = x - 5$ 19) _____



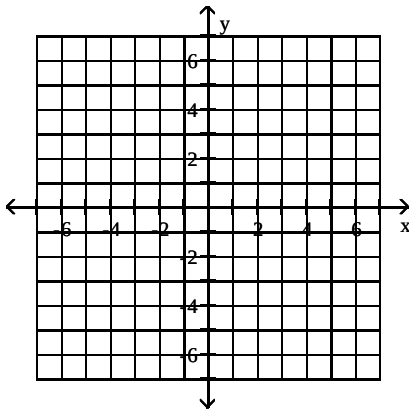
20) $y = -\frac{1}{2}x - 2$ 20) _____



21) $y = -\frac{1}{4}x - 4$ 21) _____

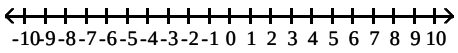


22) $y = -\frac{1}{2}x - 4$ 22) _____

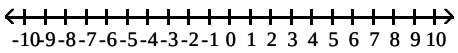


Graph the interval on a number line. (Set builder notation not required.)

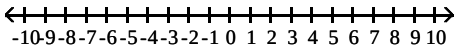
23) (–5, 8] 23) _____



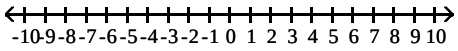
24) [–3, 4) 24) _____



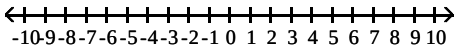
25) [–5, 7) 25) _____



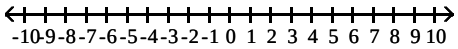
26) $\left(-\infty, \frac{9}{5}\right)$ 26) _____



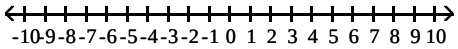
27) $\left(-\infty, \frac{9}{4}\right]$ 27) _____



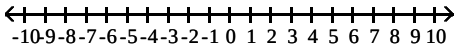
28) [–5, 8] 28) _____



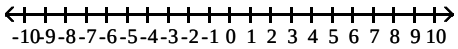
29) [–4, 3] 29) _____



30) (2, ∞) 30) _____

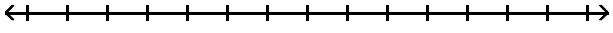


31) (8, ∞) 31) _____

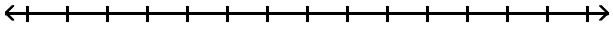


State the solution set of the inequality in interval notation and sketch its graph.

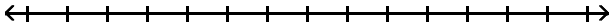
32) $4x - 2 > 3x - 7$ 32) _____



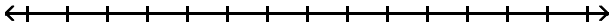
33) $6x + 7 > 5x + 14$ 33) _____



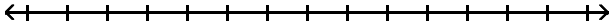
34) $3x + 3 > 2x + 8$ 34) _____



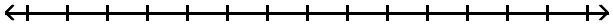
35) $6x - 5 > 5x - 6$ 35) _____



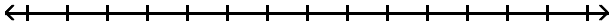
36) $8x + 4 > 7x - 2$ 36) _____



37) $5x - 2 > 4x + 4$ 37) _____

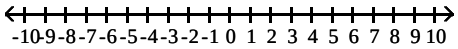


38) $4x - 6 > 3x - 4$ 38) _____

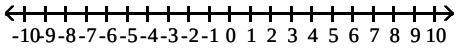


Graph the interval on a number line.

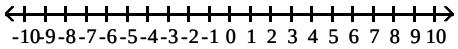
39) $[-9, \infty)$ 39) _____



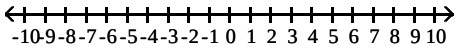
40) $[-1, \infty)$ 40) _____



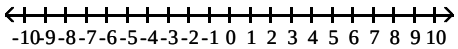
41) $[-8, \infty)$ 41) _____



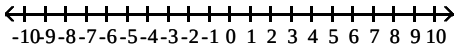
42) $(-\infty, 8.5]$ 42) _____



43) $(-\infty, 7.5]$ 43) _____

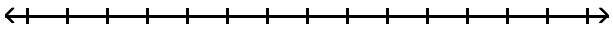


44) $(-\infty, 2.5]$ 44) _____

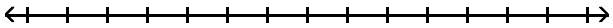


State the solution set of the inequality in interval notation and sketch its graph.

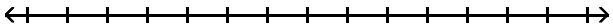
45) $8x + 5 > 7x - 1$ 45) _____



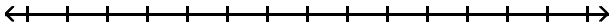
46) $-5x + 2 \geq -6x + 5$ 46) _____



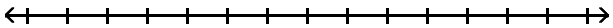
47) $-6x + 1 \geq -7x - 4$ 47) _____



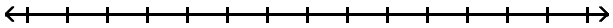
48) $10x - 12 > 2(4x - 8)$ 48) _____



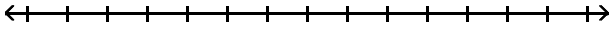
49) $21x + 15 > 3(6x - 2)$ 49) _____



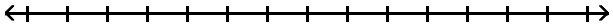
50) $-12x - 9 \leq -3(3x - 4)$ 50) _____



51) $-12x - 6 \leq -3(3x + 5)$ 51) _____

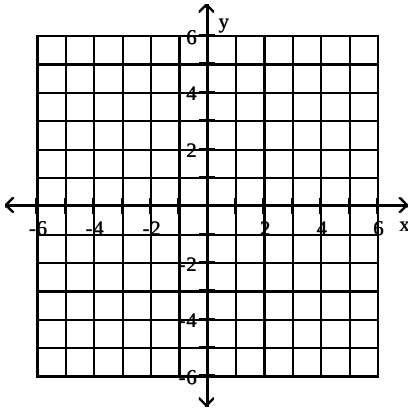


52) $6x - 1 \geq 5x - 7$ 52) _____

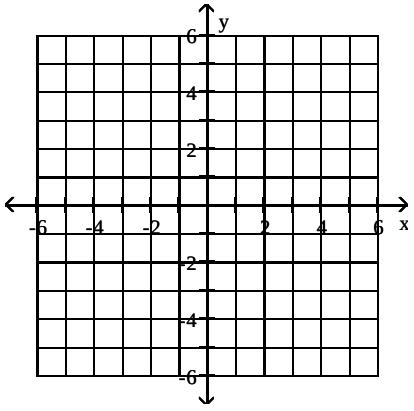


Graph the equation.

53) $y = x + 5$ 53) _____

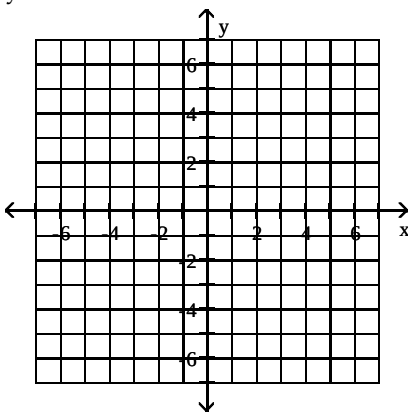


54) $y = x - 1$ 54) _____



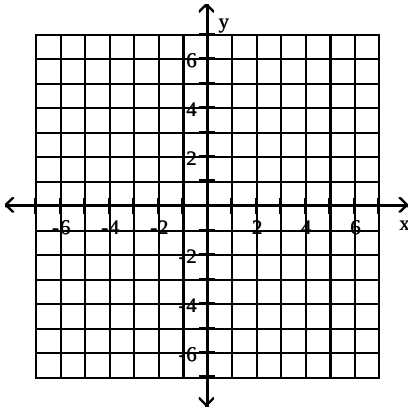
55) y = 6x – 5

55) _____



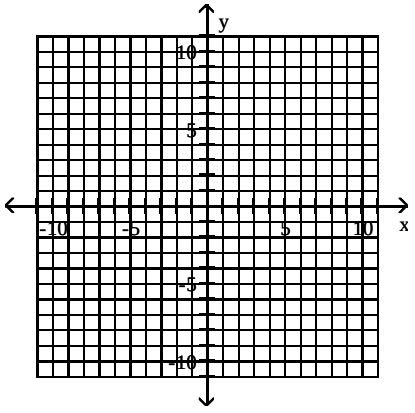
56) y = 6x + 5

56) _____



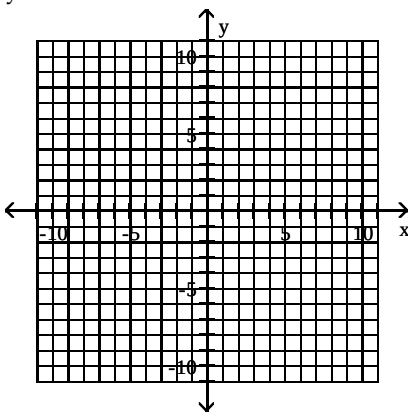
57) y = 1

57) _____



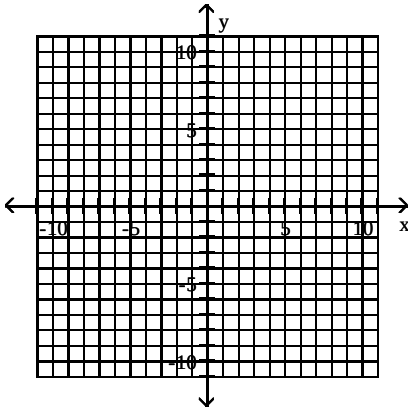
58) $y = 4$

58) _____



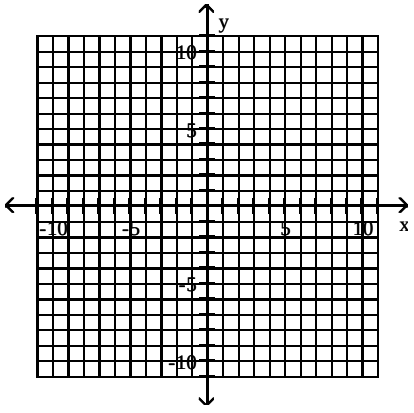
59) $y = x^2 - 2$

59) _____



60) $y = x^2 - 3$

60) _____



Determine the domain and range of the relation. State whether the relation is a function or not a function.

61)

input	6	8	6	2
output	14	11	10	2

61) _____

62)

input	2	8	2	1
output	5	7	3	9

62) _____

63)

input	-9	-7	7	9
output	4	8	4	8

63) _____

64)

input	-3	-2	2	3
output	7	9	7	9

64) _____

Solve the problem.

65) Some values for a relation are given in the table. Is the relation a function? 65) _____

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

66) Some values for a relation are given in the table. Is the relation a function? 66) _____

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

Solve the system . If there is no solution or an infinite number of solutions, so state. Use set notation to express the solution set.

67) $\begin{cases} x + y = -11 \\ x - y = 1 \end{cases}$ 67) _____

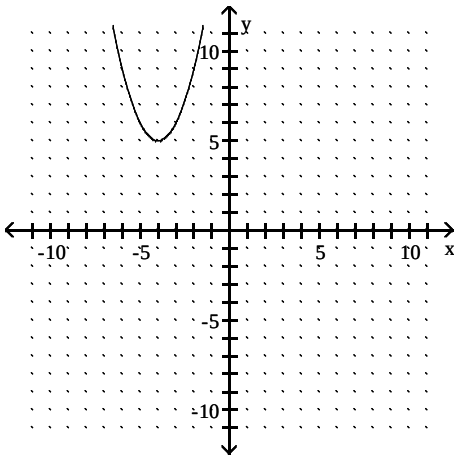
68) $\begin{cases} x + y = 1 \\ x - y = -5 \end{cases}$ 68) _____

69) $\begin{cases} x - 7y = 1 \\ 2x - 7y = 9 \end{cases}$ 69) _____

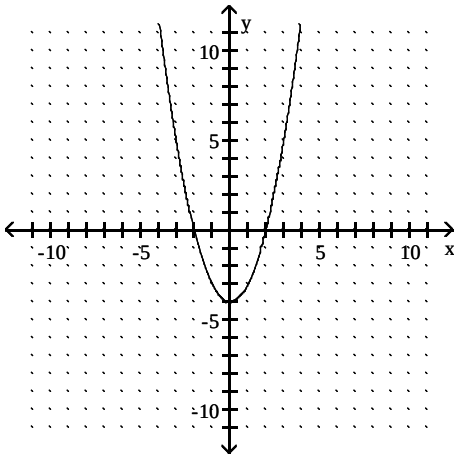
70) $\begin{cases} x + 2y = -2 \\ 2x + 2y = -8 \end{cases}$ 70) _____

Find the domain and the range of the relation.

71) 71) _____

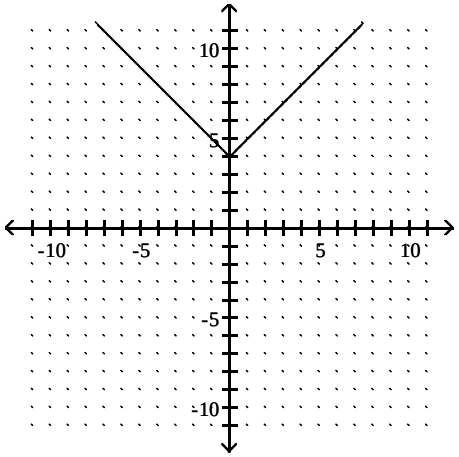


72)



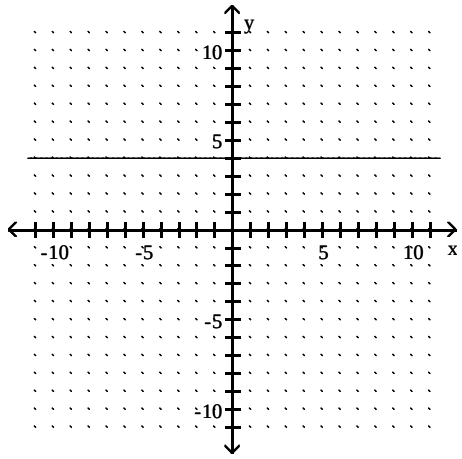
72) _____

73)



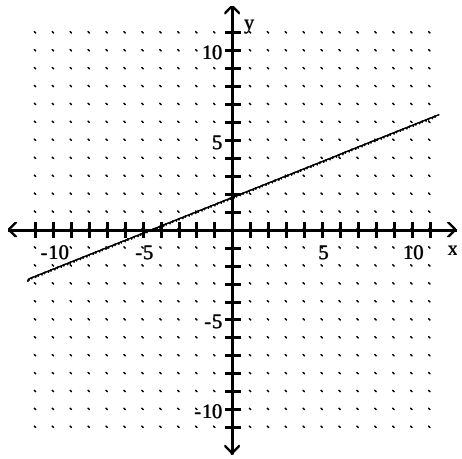
73) _____

74)



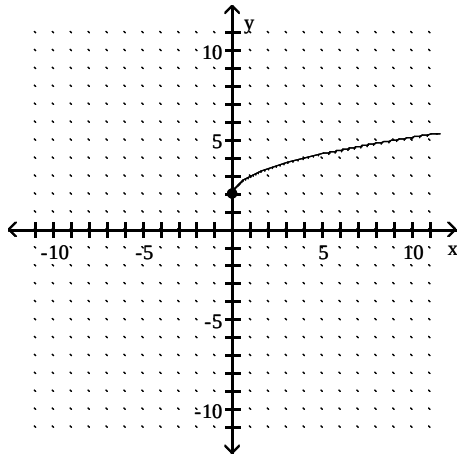
74) _____

75)



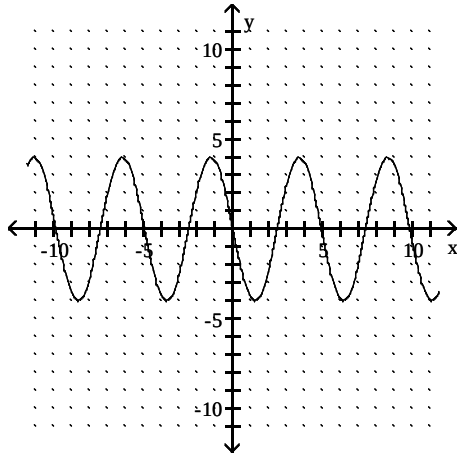
75) _____

76)

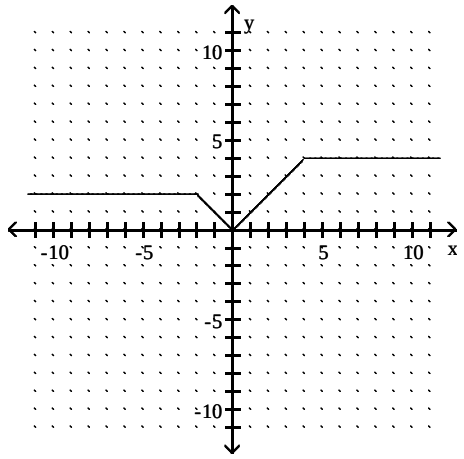


76) _____

77)



77) _____

78) 

78) _____

Decide whether the relation is a function.

79) {(1, –9), (3, –3), (4, 9), (8, –4), (12, 6)}

79) _____

80) {(1, 5), (3, –9), (5, –9), (9, 6), (12, –6)}

80) _____

81) {(–3, –1), (–1, –5), (3, 2), (3, 4)}

81) _____

82) {(–6, 9), (–3, 4), (1, –9), (8, –7)}

82) _____

83) {(–4, 6), (–1, 5), (4, –6), (6, –8)}

83) _____

84) {(–6, 2), (–3, 1), (2, –8), (5, –5)}

84) _____

Evaluate the function at the given value.

85) $f(x) = 3x - 1$; $f(-2)$ 85) _____

86) $f(x) = -4x - 2$; $f(9)$ 86) _____

87) $f(x) = 14x + 9$; $f(0)$ 87) _____

88) $h(x) = 7$; $h(9)$ 88) _____

89) $h(x) = 3$; $h(7)$ 89) _____

90) $h(x) = 6$; $h(-10)$ 90) _____

91) $h(x) = -8$; $h(10)$ 91) _____

92) $h(x) = -12$; $h(-2)$ 92) _____

93) $g(x) = -2x$; $g(11)$ 93) _____

94) $g(x) = -12x$; $g(-8)$ 94) _____

Find the slope of the line passing through the pair of points or state that the slope is undefined.

95) (–13, –2) and (–18, –14) 95) _____

96) (1, 6) and (–9, 2) 96) _____

97) (8, –2), (2, 7) 97) _____

98) (–8, 2), (–2, –3) 98) _____

99) (–8, –9), (9, –7) 99) _____

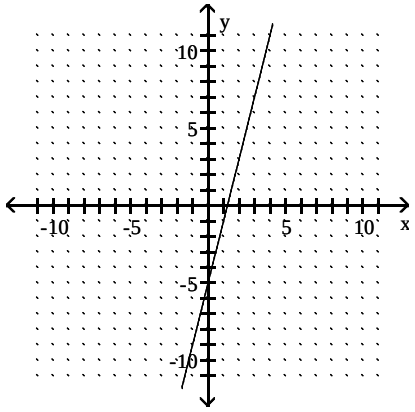
100) (–2, –4) and (–2, –1) 100) _____

101) (6, –9) and (6, 1) 101) _____

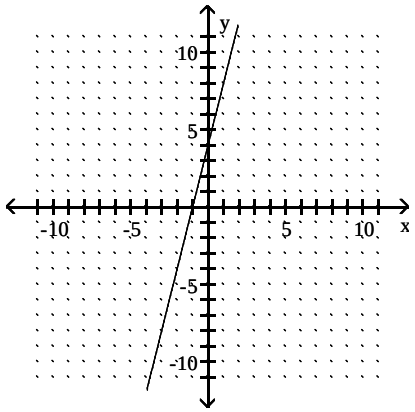
102) (–8, –1) and (–8, 8) 102) _____

103) (–6, 3) and (–6, 1) 103) _____

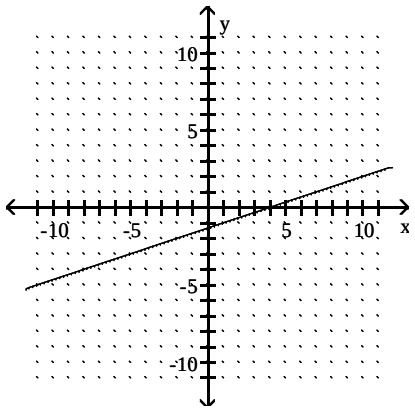
Find the slope of the line, or state that the slope is undefined.

104) 

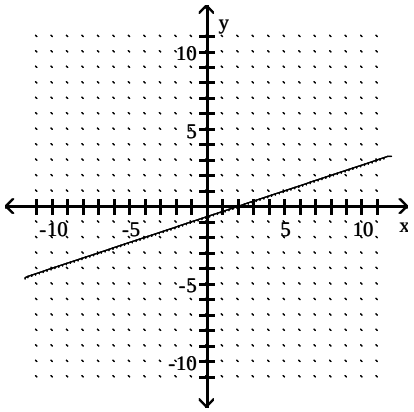
104) _____

105) 

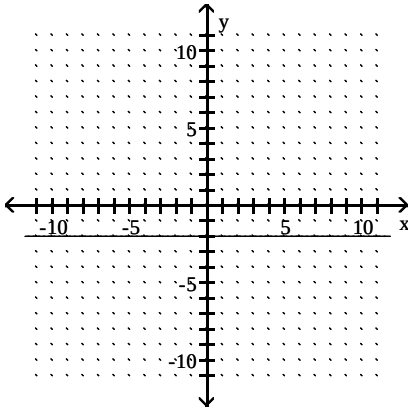
105) _____

106) 

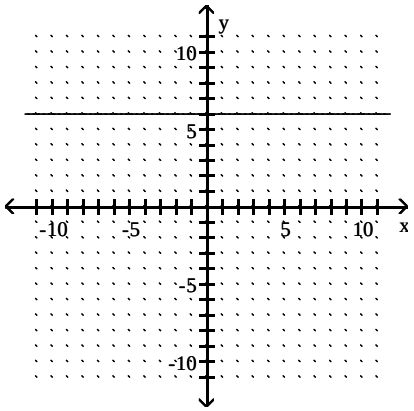
106) _____

107) 

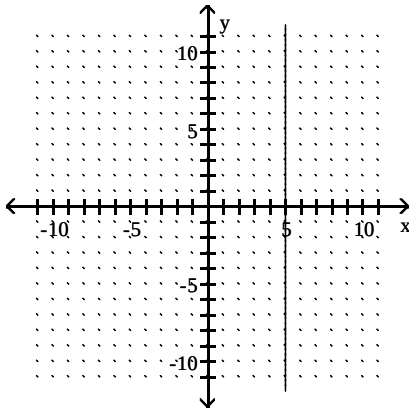
107) _____

108) 

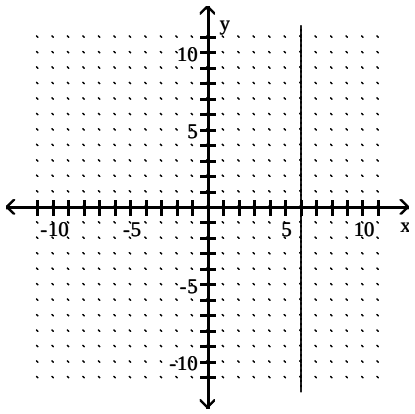
108) _____

109) 

109) _____

110) 

110) _____

111) 

111) _____

Solve the system by the addition method. If there is no solution or an infinite number of solutions, so state. Use set notation to express the solution set.

112) $\begin{cases} x + y = 15 \\ x - y = -1 \end{cases}$

112) _____

113) $\begin{cases} x + y = -1 \\ x - y = 3 \end{cases}$

113) _____

114) $\begin{cases} x + y = -6 \\ x - y = 2 \end{cases}$

114) _____

115) $\begin{cases} x + y = 13 \\ x - y = -3 \end{cases}$ 115) _____

116) $\begin{cases} x + 3y = 10 \\ 2x + 3y = 5 \end{cases}$ 116) _____

Solve.

117) Kevin invested part of his $10,000 bonus in a certificate of deposit that paid 6% annual interest, and the remainder in a mutual fund that paid 11% annual interest. If his total interest for that year was $900, how much did Kevin invest in the mutual fund? 117) _____

118) Kevin invested part of his $10,000 bonus in a certificate of deposit that paid 6% annual interest, and the remainder in a mutual fund that paid 11% annual interest. If his total interest for that year was $800, how much did Kevin invest in the mutual fund? 118) _____

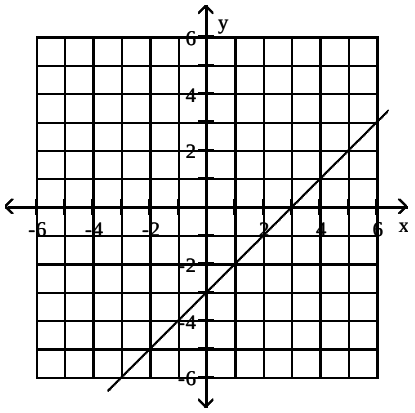
119) Melissa invested a sum of money at 3% annual interest. She invested three times that sum at 5% annual interest. If her total yearly interest from both investments was $7200, how much was invested at 3%? 119) _____

120) Melissa invested a sum of money at 3% annual interest. She invested three times that sum at 5% annual interest. If her total yearly interest from both investments was $3600, how much was invested at 3%? 120) _____

121) A bank loaned out $68,000, part of it at the rate of 14% per year and the rest at a rate of 7% per year. If the interest received was $6580, how much was loaned at 14%? 121) _____

122) A bank loaned out $54,000, part of it at the rate of 11% per year and the rest at a rate of 5% per year. If the interest received was $4200, how much was loaned at 11%? 122) _____

1) {–16}
2) {–40}
3) $\left\{\frac{64}{7}\right\}$
4) $\left\{\frac{36}{5}\right\}$
5) {30}
6) {– 80}
7) $\left\{-\frac{35}{3}\right\}$
8) 80°
9) 60°
10) 70°
11) 75°
12) 105°
13) 125°
14) 140°
15) 150°
16) 155°
17)



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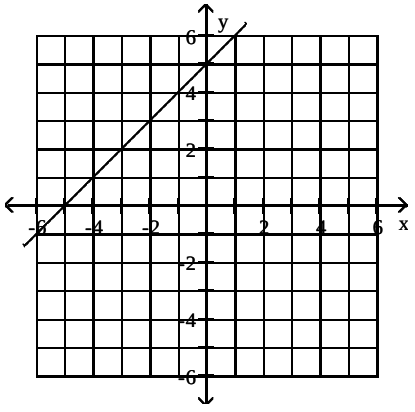
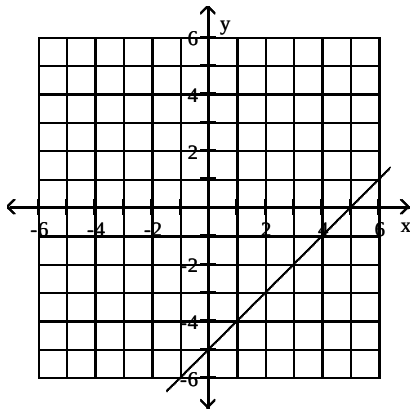
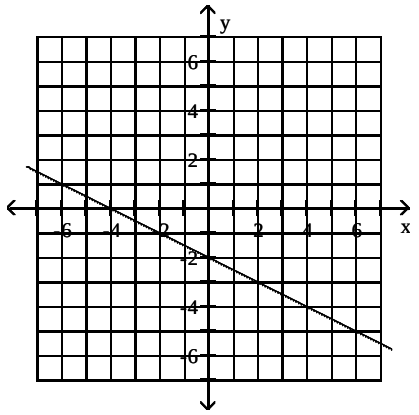


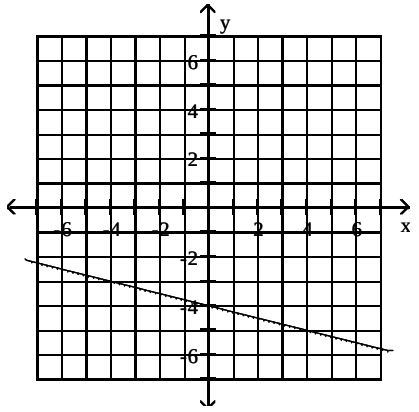
19)



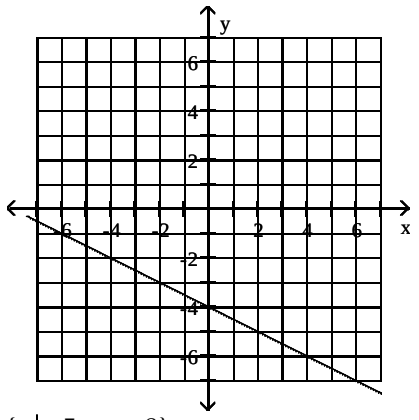
20)



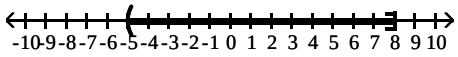
21)



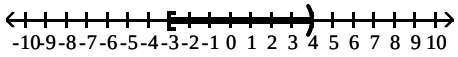
22)



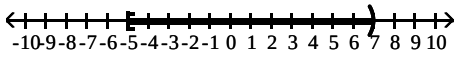
23) $\{x \mid -5 < x \le 8\}$



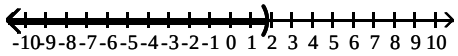
24) $\{x \mid -3 \le x < 4\}$



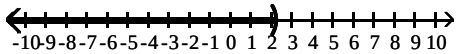
25) $\{x \mid -5 \le x < 7\}$



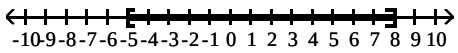
26) $\left\{x \mid x < \frac{9}{5}\right\}$



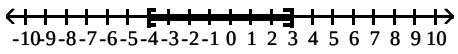
27) $\left\{x \mid x < \frac{9}{4}\right\}$



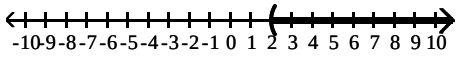
28) $\{x \mid -5 \le x \le 8\}$



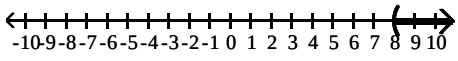
29) $\{x \mid -4 \le x \le 3\}$



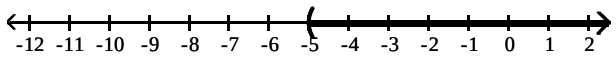
30) $\{x \mid x > 2\}$



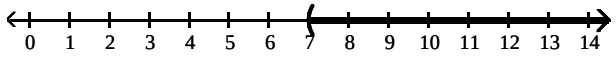
31) $\{x \mid x > 8\}$



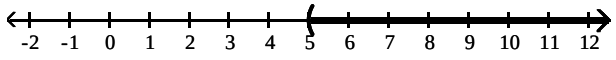
32) $(-5, \infty)$



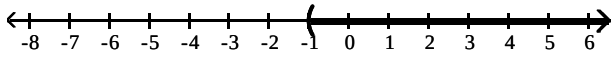
33) $(7, \infty)$



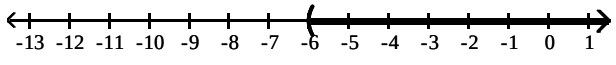
34) $(5, \infty)$



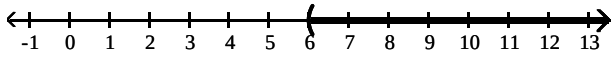
35) $(-1, \infty)$



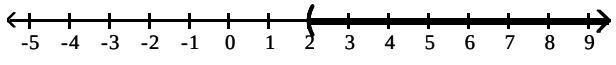
36) $(-6, \infty)$



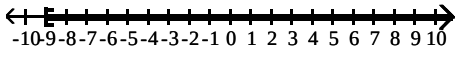
37) $(6, \infty)$



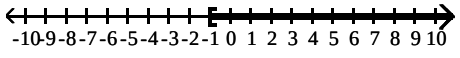
38) $(2, \infty)$



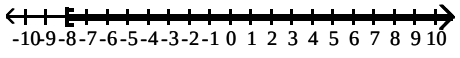
39) $\{x \mid x \geq -9\}$



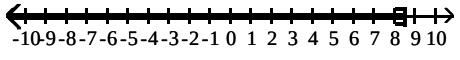
40) $\{x \mid x \geq -1\}$



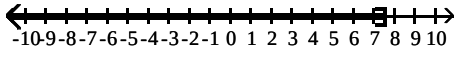
41) $\{x \mid x \geq -8\}$



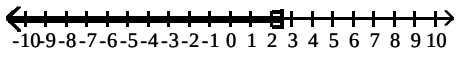
42) $\{x \mid x \leq 8.5\}$



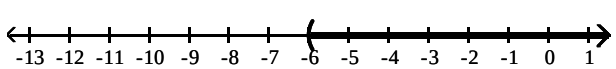
43) $\{x \mid x \leq 7.5\}$



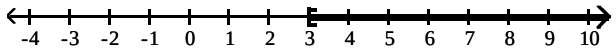
44) $\{x \mid x \leq 2.5\}$



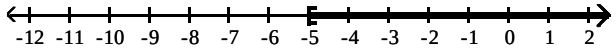
45) $(-6, \infty)$



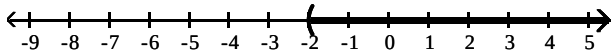
46) [3, ∞)



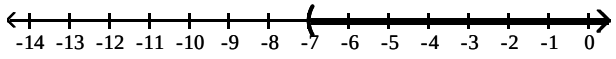
47) [–5, ∞)



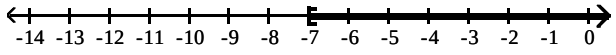
48) (–2, ∞)



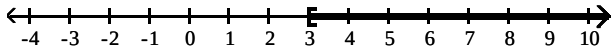
49) (–7, ∞)



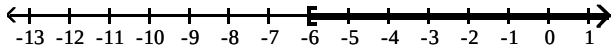
50) [–7, ∞)



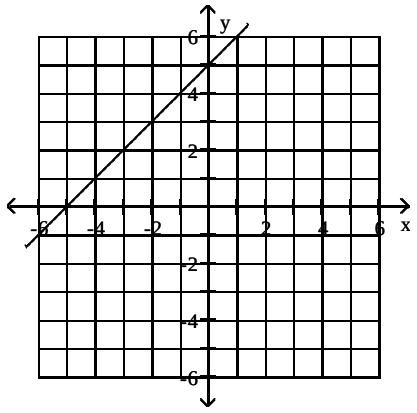
51) [3, ∞)



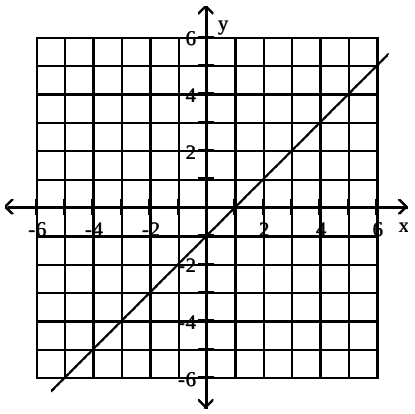
52) [–6, ∞)



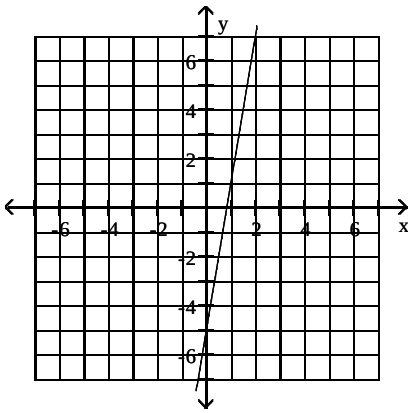
53)



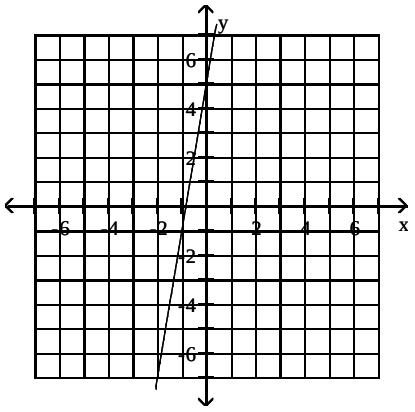
54)



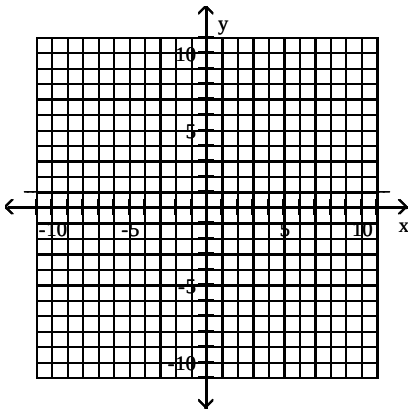
55)



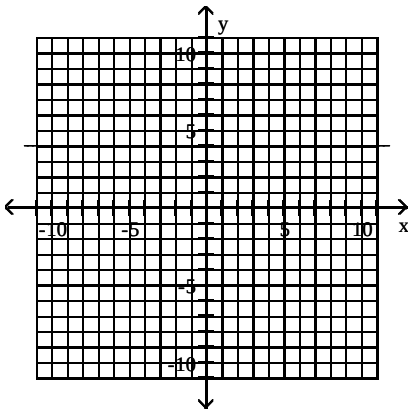
56)



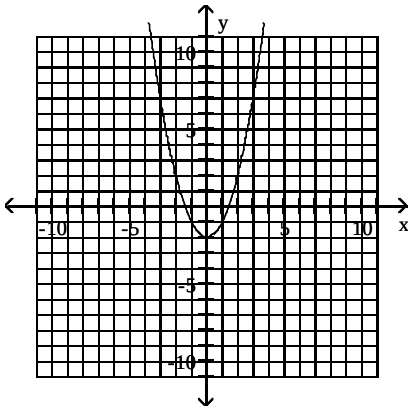
57)



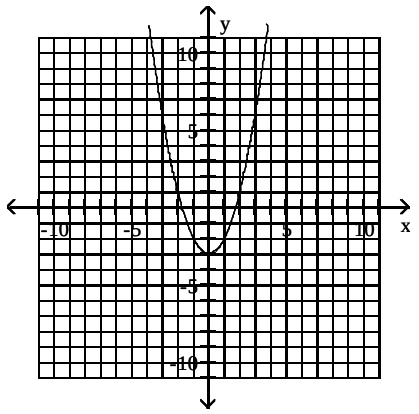
58)



59)



60)



61) domain: {6, 2, 8}
range: {10, 2, 11, 14}
not a function
62) domain: {2, 1, 8}
range: {3, 9, 7, 5}
not a function
63) domain: {-9,-7, 7, 9}
range: { 4, 8}
function
64) domain: {-3,-2, 2, 3}
range: { 7, 9}
function
65) No
66) Yes
67) {(−5, −6)}
68) {(−2, 3)}
69) {(8, 1)}
70) {(−6, 2)}
71) domain: all real numbers; range: $y \geq 5$
72) domain: all real numbers; range: $y \geq -4$
73) domain: all real numbers; range: $y \geq 4$
74) domain: all real numbers; range: $y = 4$
75) domain: all real numbers; range: all real numbers
76) domain: $x \geq 0$; range: $y \geq 2$
77) domain: all real numbers; range: $-4 \leq y \leq 4$
78) domain: all real numbers; range: $0 \leq y \leq 4$
79) Function
80) Function
81) Not a function
82) Function
83) Function
84) Function
85) −7
86) −38
87) 9
88) 7
89) 3

90) 6
91) –8
92) –12
93) –22
94) 96
95) $\frac{12}{5}$
96) $\frac{2}{5}$
97) $-\frac{3}{2}$
98) $-\frac{5}{6}$
99) $\frac{2}{17}$
100) undefined
101) undefined
102) undefined
103) undefined
104) 4
105) 4
106) $\frac{1}{3}$
107) $\frac{1}{3}$
108) 0
109) 0
110) Undefined
111) Undefined
112) {(7, 8)}
113) {(1, –2)}
114) {(–2, –4)}
115) {(5, 8)}
116) {(–5, 5)}
117) $6000
118) $4000
119) $40,000
120) $20,000
121) $26,000
122) $25,000