Review for Test #4 over Sect 3.1 & 3.2

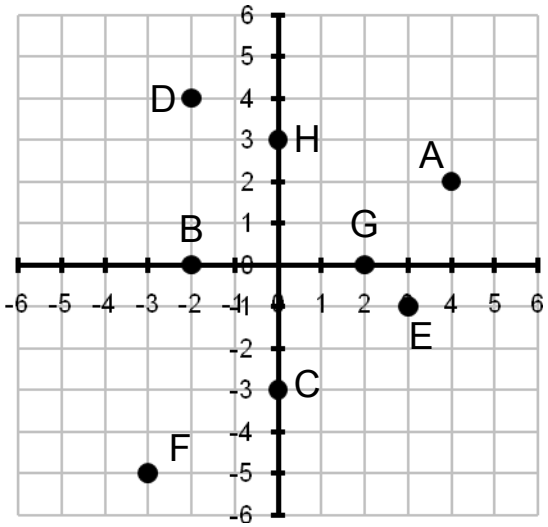
Work all the problems on a separate piece of paper showing all steps.

Graph the points on a rectangular coordinate System:

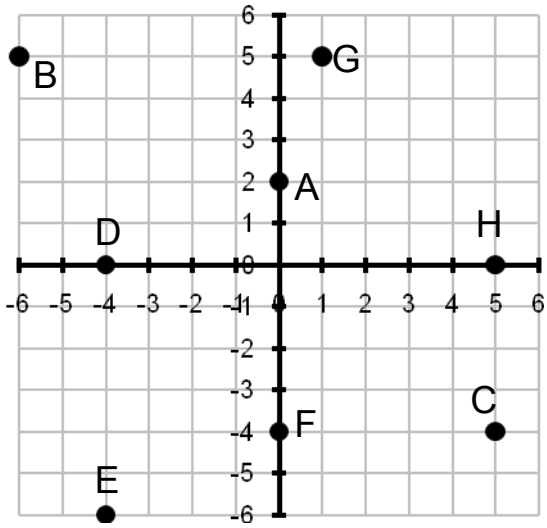
1a) (– 3, 5) 1b) (2, – 4) 1c) (0, 5) 1d) (– 4, 0)
1e) (– 2, – 3) 1f) (5, 0) 1g) (0, – 2) 1h) (1, 4)

Estimate the coordinates of the following points:

2)



3)



Determine identify quadrant or axis in which the given point is found:

4a) (6, – 5) 4b) (2.3, 0) 4c) (0, – 3) 4d) $(-\frac{2}{3}, -7.8567)$
4e) $(\sqrt{2}, 1)$ 4f) $(-\frac{5}{14}, 0)$ 4g) (– π, 2) 4h) (0, 4.45463)

Determine if the given ordered pair is a solution to the equation:

5) $3x + 2y = 6$; (1, 1)

6) $0.2x – 0.7y = 1.9$; (– 1, – 3)

7) $y = – 5x + 3$; (– 2, 13)

8) $4x – 4 = 8$; (0, 2)

9) $3y – 2 = 2(y – 3) + 4$; (3, 0)

10) $\frac{2}{5}y – \frac{4}{7}x = -\frac{22}{105}$; $(\frac{3}{5}, \frac{1}{3})$

11) $4x – 3 = 2(y – 4) + 5$; (0, 0)

12) $y = \frac{4}{3}x – 3$; (6, 3)

Find the x- and y-intercepts of the following:

13) $-6x - 4y = 4$

14) $x = -7$

15) $y = -\frac{3}{4}x + 2$

16) $4x - 3 = 2(5y - 2) + 1$

17) $y = 1.8x - 6.25$

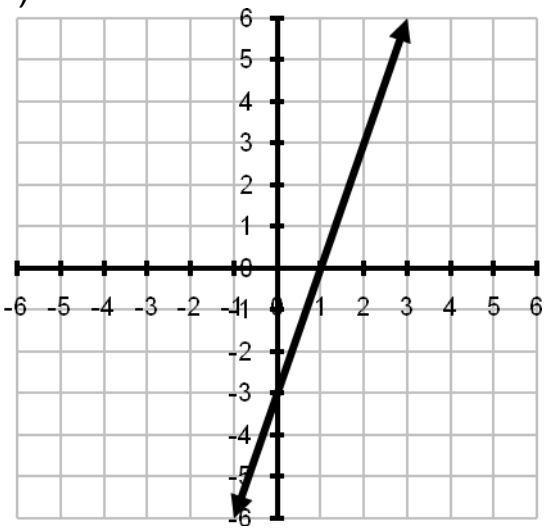
18) $\frac{4}{7}x - \frac{4}{3}y = 16$

19) $3y - 4 = -10$

20) $3x + 4y = -0.12$

Given the graphs below, find the x- and y-intercepts of the following:

21)



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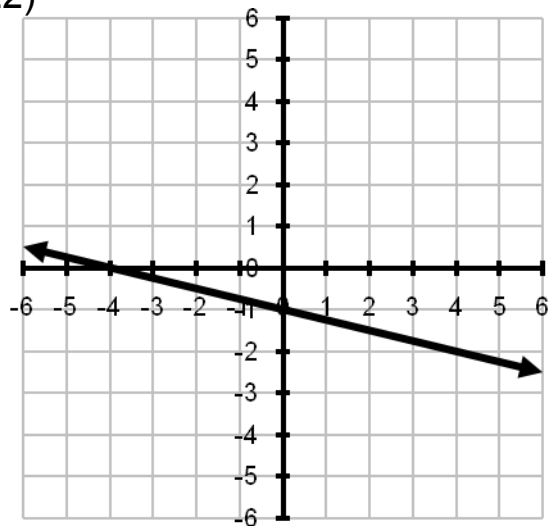

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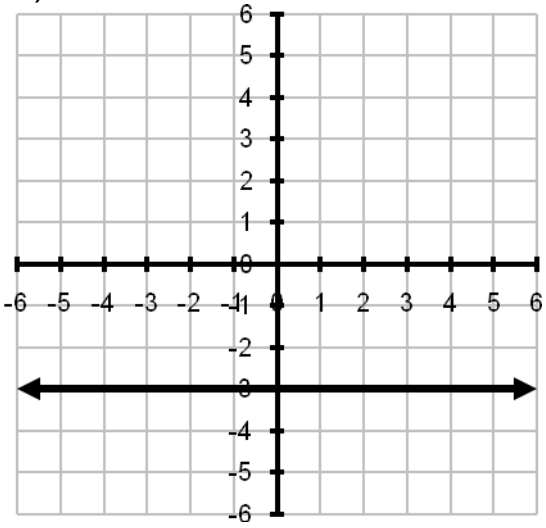

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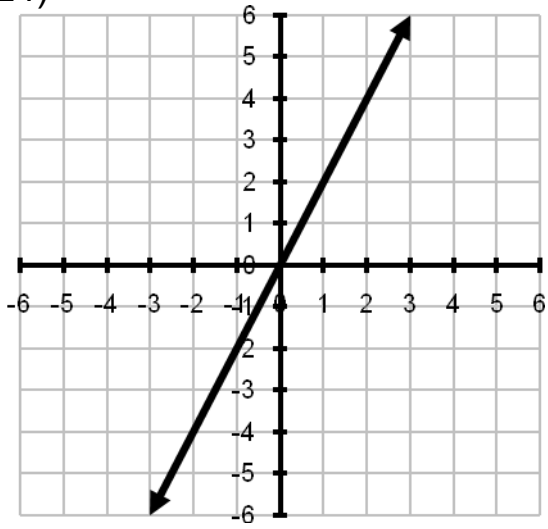

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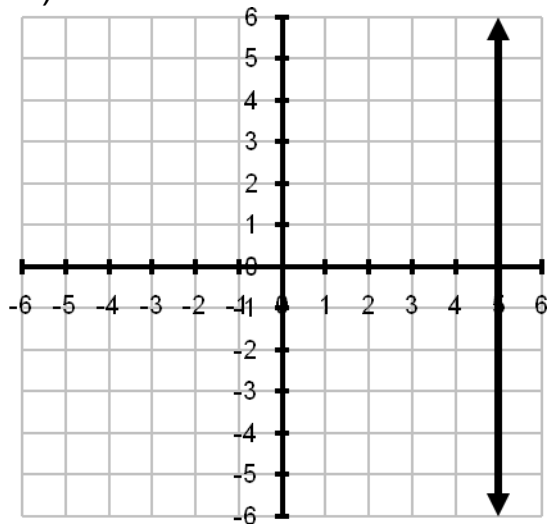

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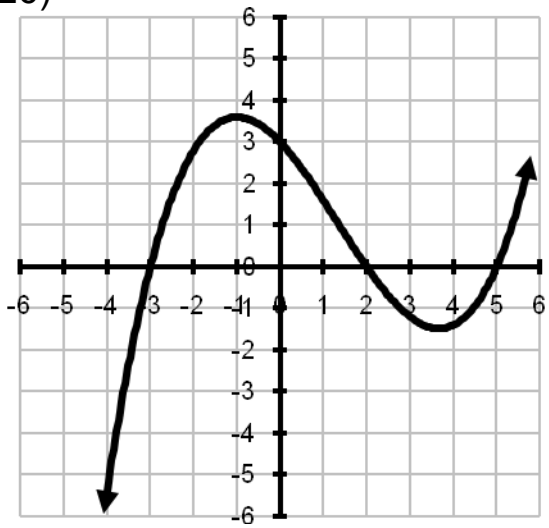


Graph the following lines:

27) $3x + 2y = -6$

28) $0.2x - 0.5y = 1$

29) $y = -3x + 4$

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

31) $y = 4$

32) $y = -\frac{4}{3}x + 5$

33) $3x - 8 = -14$

34) $x = 4y$

Solve the following:

35) The chart to the right gives the population of Texas for the years 2000 through 2008. Let x represent the number of years after 1999 and let y represent the population measured in millions of people.

a) Write the corresponding ordered pairs.

b) Plot the ordered pairs from part a on a graph.

c) Interpret the meaning of the first ordered pair.

Year	Population of Texas
2000	20.9 million
2001	21.3 million
2002	21.7 million
2003	22.1 million
2004	22.4 million
2005	22.8 million
2006	23.4 million
2007	23.8 million
2008	24.3 million

Source: www.census.gov

36) The following ordered pairs gives the total revenue for the City of San Antonio for the years 2002 through 2008. Let x represent the number of years after 2001 and let y represent the total revenue measured in millions of dollars. (Source: www.sanantonio.gov)

(1, 1104) (2, 1183) (3, 1147) (4, 1268)
(5, 1431) (6, 1572) (7, 1719)

a) Interpret the mean of the ordered pair (4, 1268).
b) Plot the points on a graph.

37) A cell phone plan charges a flat fee of $39.99 for the first five hundred minutes used per month. For each additional minute over 500 minutes, the plan charges 69¢ per minute. The following equation expresses the monthly bill, y, in dollars for x number of minutes over five hundred minutes used.

$y = 0.69x + 39.99 \quad (x \geq 500)$

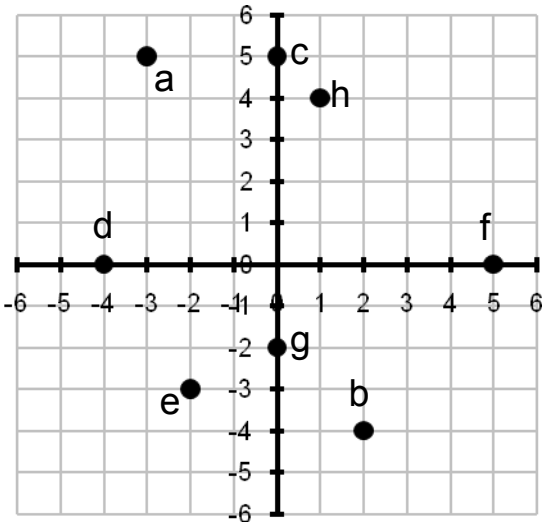
a) Find y when x = 20.
b) Find x when y = 91.74.
c) Write the ordered pairs from parts a and b and interpret their meaning.
d) Graph the ordered pairs and the line defined by the points

38) The value of a certain car is given by the equation $y = -1859x + 24{,}167$ $(x \geq 0)$, where y is the value of the car in dollars and x is the number of years after the car is purchased.

a) Find y when x = 3.
b) Find x when y = 0.
c) Write the ordered pairs from parts a and b and interpret their meaning.
d) Graph the ordered pairs and the line defined by the points

Answers:

1)



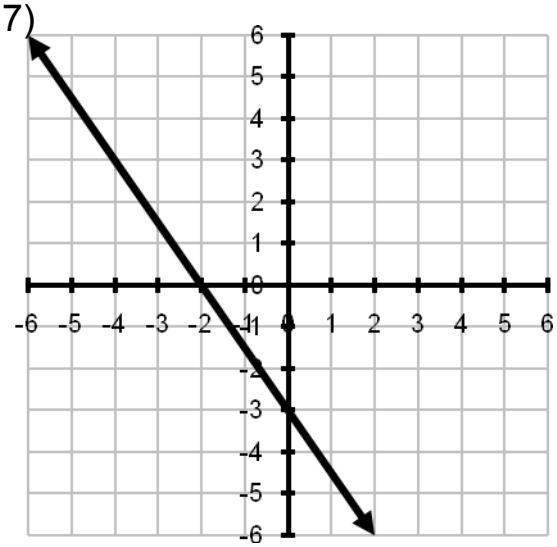
2) A: (4, 2) B: (– 2, 0)
C: (0, – 3) D: (– 2, 4)
E: (3, – 1) F: (– 3, – 5)
G: (2, 0) H: (0, 3)

3) A: (0, 2) B: (– 6, 5)
C: (5, – 4) D: (– 4, 0)
E: (– 4, – 6) F: (0, – 4)
G: (1, 5) H: (5, 0)

4a) IV 4b) + x-axis 4c) – y-axis
4d) III 4e) I 4f) – x-axis
4g) II 4h) + y-axis

5) No 6) Yes 7) Yes 8) No 9) Yes 10) Yes 11) Yes
12) No 13) x-int: (– 1.5, 0); y-int: (0, – 1) 14) x-int: (– 7, 0); y-int: none
15) x-int: $(\frac{8}{3}, 0)$; y-int: (0, 2) 16) x-int: (0, 0); y-int: (0, 0)
17) x-int: $(\frac{125}{36}, 0)$; y-int: (0, – 6.25) 18) x-int: (28, 0); y-int: (0, – 12)
19) x-int: none; y-int: (0, – 2) 20) x-int: (– 0.04, 0); y-int: (0, – 0.03)
21) x-int: (1, 0); y-int: (0, – 3) 22) x-int: (– 4, 0); y-int: (0, – 1)
23) x-int: none; y-int: (0, – 3) 24) x-int: (0, 0); y-int: (0, 0)
25) x-int: (5, 0); y-int: none 26) x-int: (– 3, 0), (2, 0), & (5, 0); y-int: (0, 3)

27)



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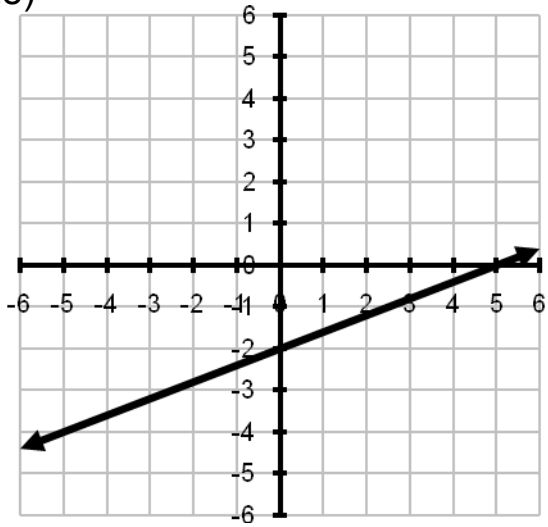

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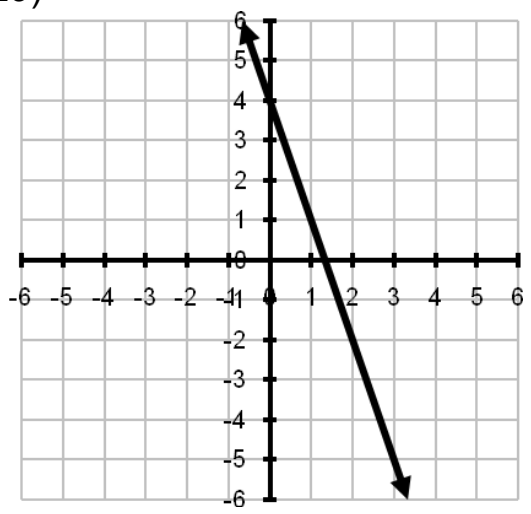

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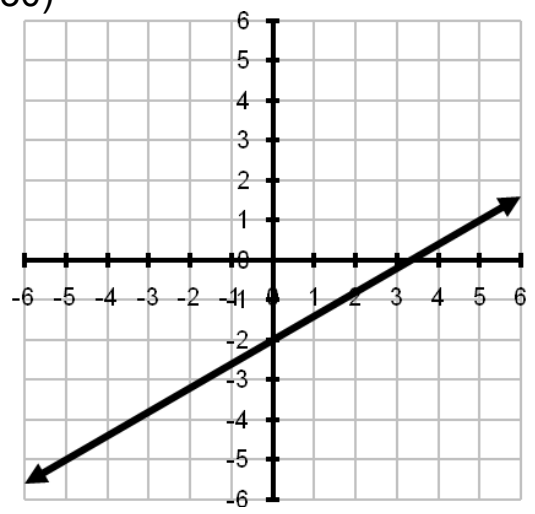

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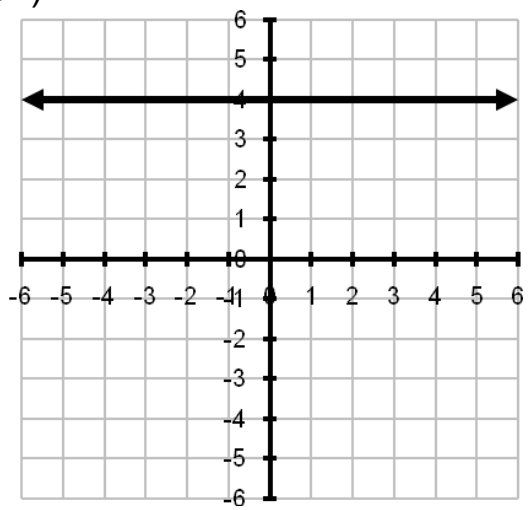

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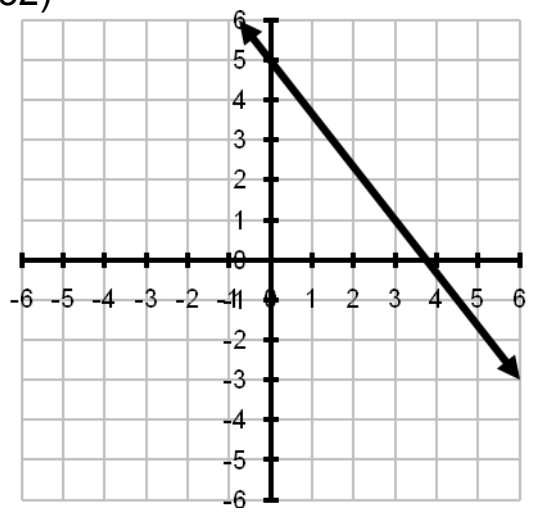

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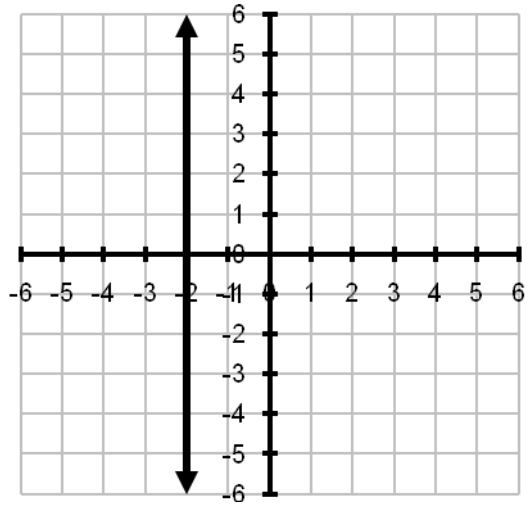
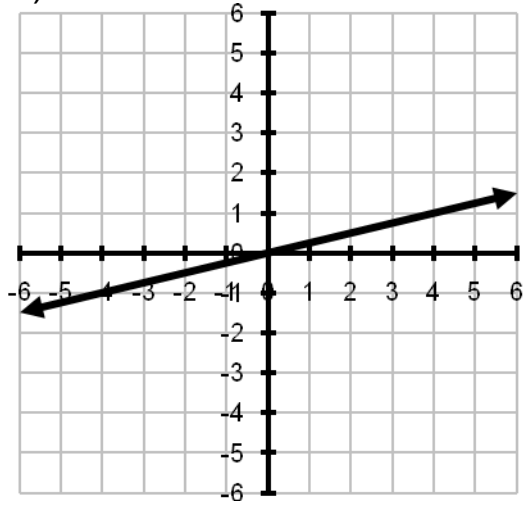
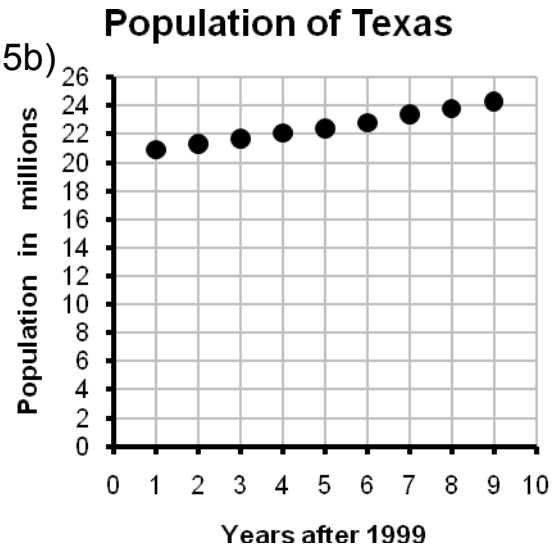


34)



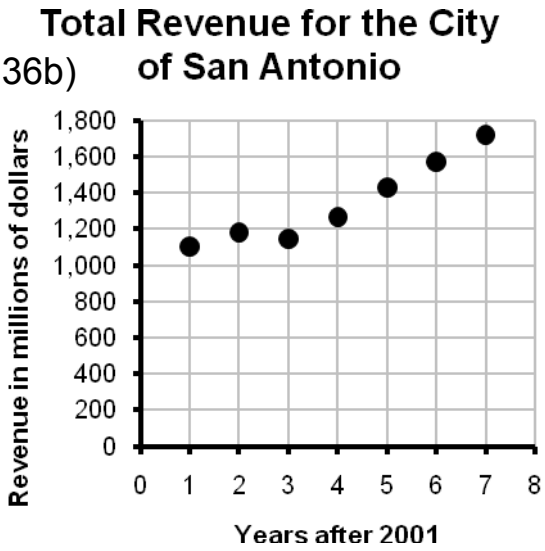
35a) (1, 20.9), (2, 21.3), (3, 21.7), (4, 22.1), (5, 22.4), (6, 22.8), (7, 23.4), (8, 23.8), (9, 24.3)

35b)



36a) Since x = 4 corresponds to 2005, then in 2005, the total revenue was $1,268 million.

36b)

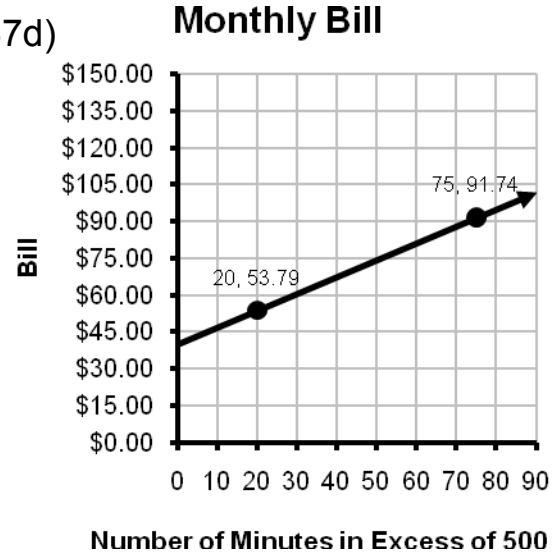


35c) The point (1, 20.9) means that in the year 2000, Texas had a population of 20.9 million people.

37a) y = 53.79 37b) x = 75

37c) (20, 53.79) If a person goes over by 20 minutes, then the bill will be $53.79.(75, 91.74) If a person goes over by 74 minutes, then the bill will be $91.74.

37d)



38a) y = 18,590 38b) x = 13

38c) (3, 18590) After 3 years, the car value will be $18,590. After 13 years, the car value will be 0 or the car will be essentially worthless.

38d)