TEST NAME: **NAMSCM1314SP.3**
TEST ID: **129981**
GRADE: **08**
SUBJECT: **Mathematics**
TEST CATEGORY: **My Classroom**

Student:

Class:

Date:

1. The equation $y = 0.95x + 3$ models the cost to ride in a taxi, where y is the total cost for a ride, and x is the number of miles driven. What does the slope of the line represent?

   A. It costs $3.95 to ride in the taxi.

   B. The flat fee to ride in the taxi is $3.

   C. The cost per mile to ride in the taxi is $0.95.

2. Research shows that the number of years of college education that a person earns, x, the higher that person's salary will be, y. Using the linear model $y = 5{,}000x + 20{,}000$, what does the y-intercept represent?

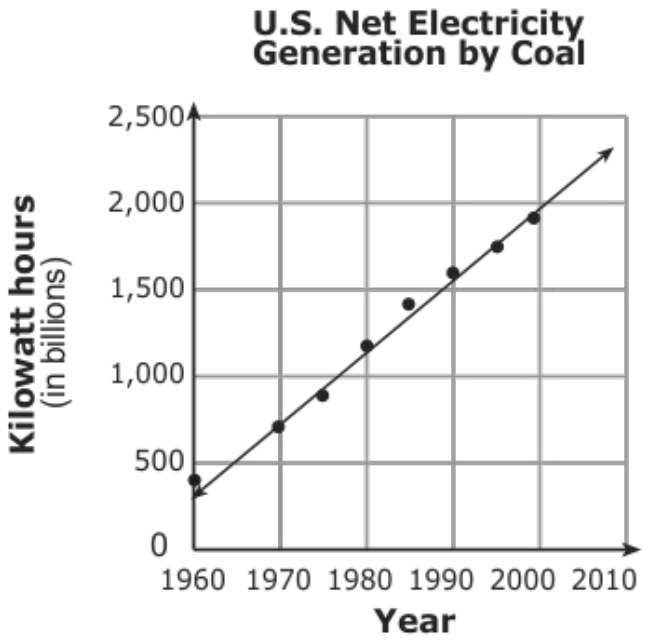
   A. A person with no college education will typically have a salary of $20,000.

   B. A person with no college education will typically have a salary of $5,000.

   C. A person will receive a $5,000 raise for each year worked.

   D. All jobs pay $20,000 the first year.

3. Electricity generated in the United States from coal over the past 30 years is shown in the scatterplot below.



A line that ***best*** fits the data was drawn. What does the slope of the line represent?

A. The United States has produced 400 billion kilowatt hours of electricity from coal every year for 30 years.

B. The United States has produced 100 billion kilowatt hours of electricity from coal every year for 30 years.

C. The United States has increased its production of electricity from coal by about 200 billion kilowatt hours per year.

D. The United States has increased its production of electricity from coal by about 40 billion kilowatt hours per year.

4. The line of best fit for a scatter plot showing the age, x, and value, y, of a car is $y = {}^{-}1{,}580x + 17{,}020$. What does the y-intercept represent?

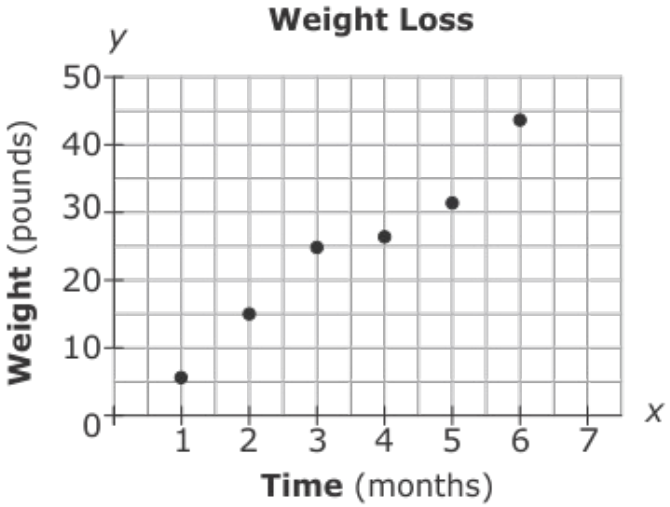
A. The age of the car is 2 years.

B. The ending value of the car is $1,580.

C. The beginning value of the car is $17,020.

D. The amount of money owed to the bank for the car is $15,440.

5. Darrell recorded the total number of pounds he lost each month after he started going to the gym. He recorded his data in the scatterplot below.



Based on a linear model, ***about*** how many pounds will Darrell have lost after 7 months?

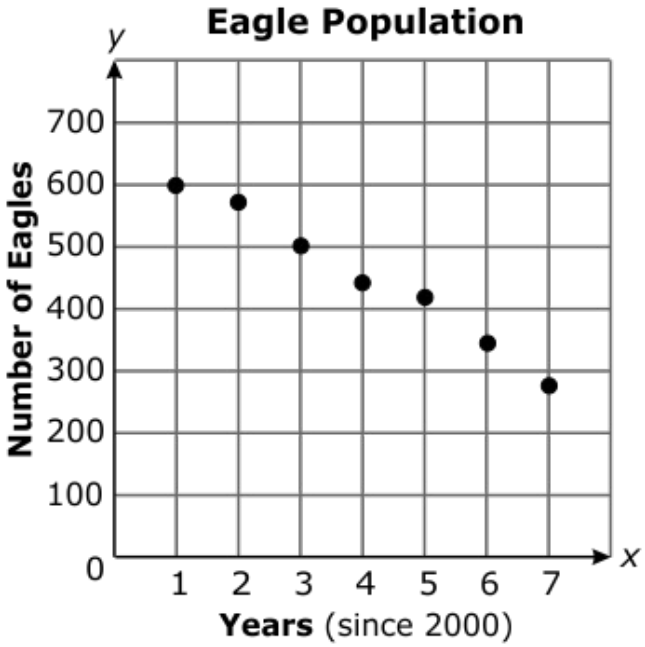
A. 45

B. 50

C. 55

D. 60

6. The scatterplot below represents the approximate population of eagles in an area since 2000.



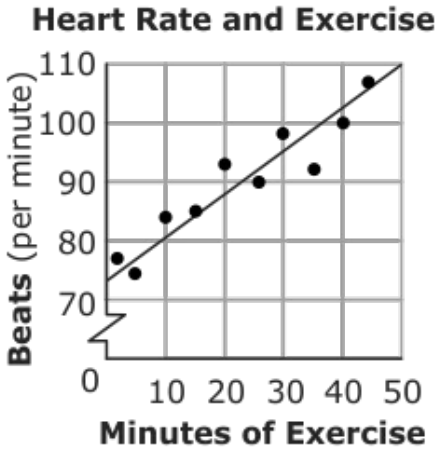
Using a linear model, what does the *y*-intercept of the line represent?

A. There were about 650 eagles in the area in 2000.

B. There were about 600 eagles in the area in 2001.

C. The eagles are decreasing by about 50 per year.

7. Samantha recorded her heart rate after exercising for different amounts of time. She created the scatterplot below with the data.



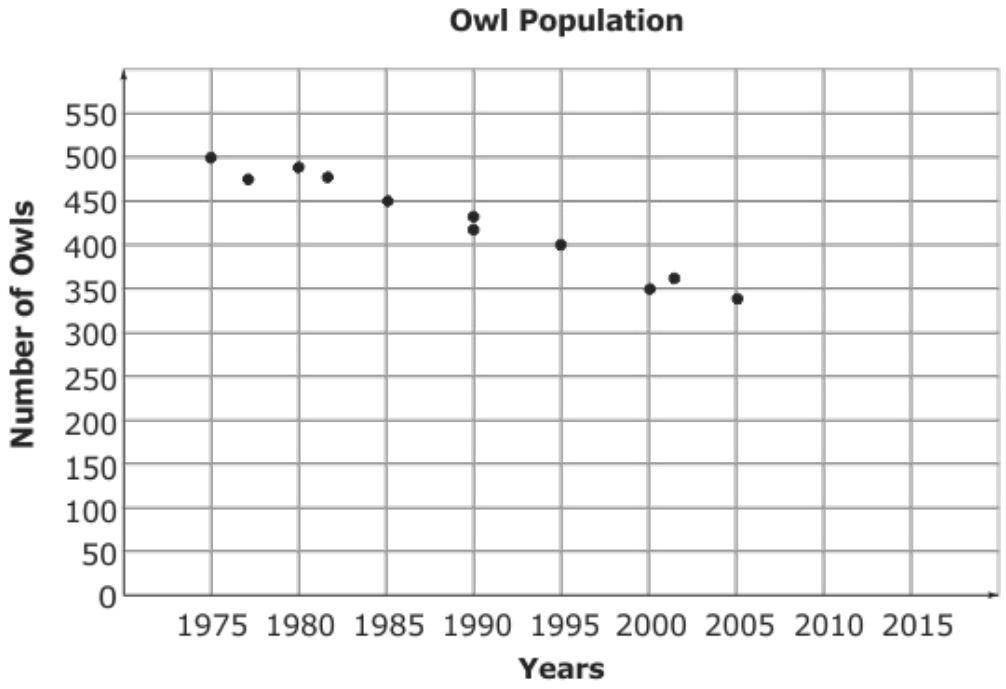
Based on a linear model, what is the meaning of the *y*-intercept?

A. the increase in Samantha's heart rate for each minute of exercise

B. Samantha's heart rate before she exercises

C. the amount of time Samantha exercises

8. The graph below shows the owl population in a city over several years.



Using a linear model, which is the ***best*** estimate of the owl population in 2010?

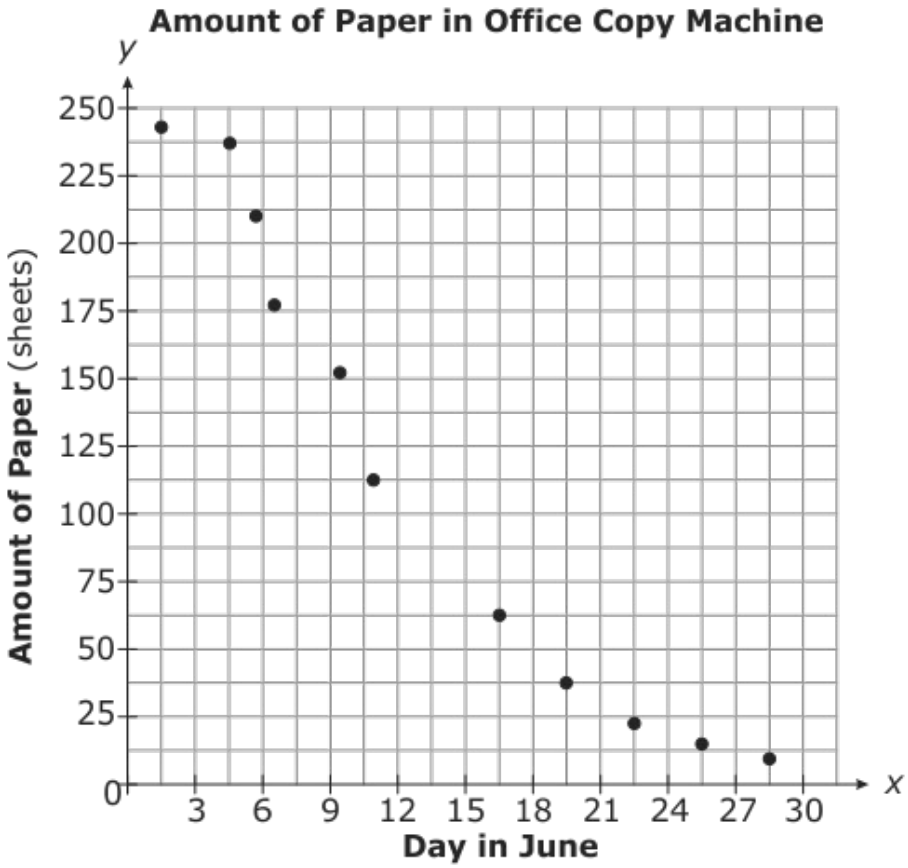
A. 250

B. 320

C. 350

D. 400

9. The scatterplot below represents the amount of paper left in an office copy machine in the month of June.



Approximately, what is the amount of paper left inside the machine on the 14th of June?

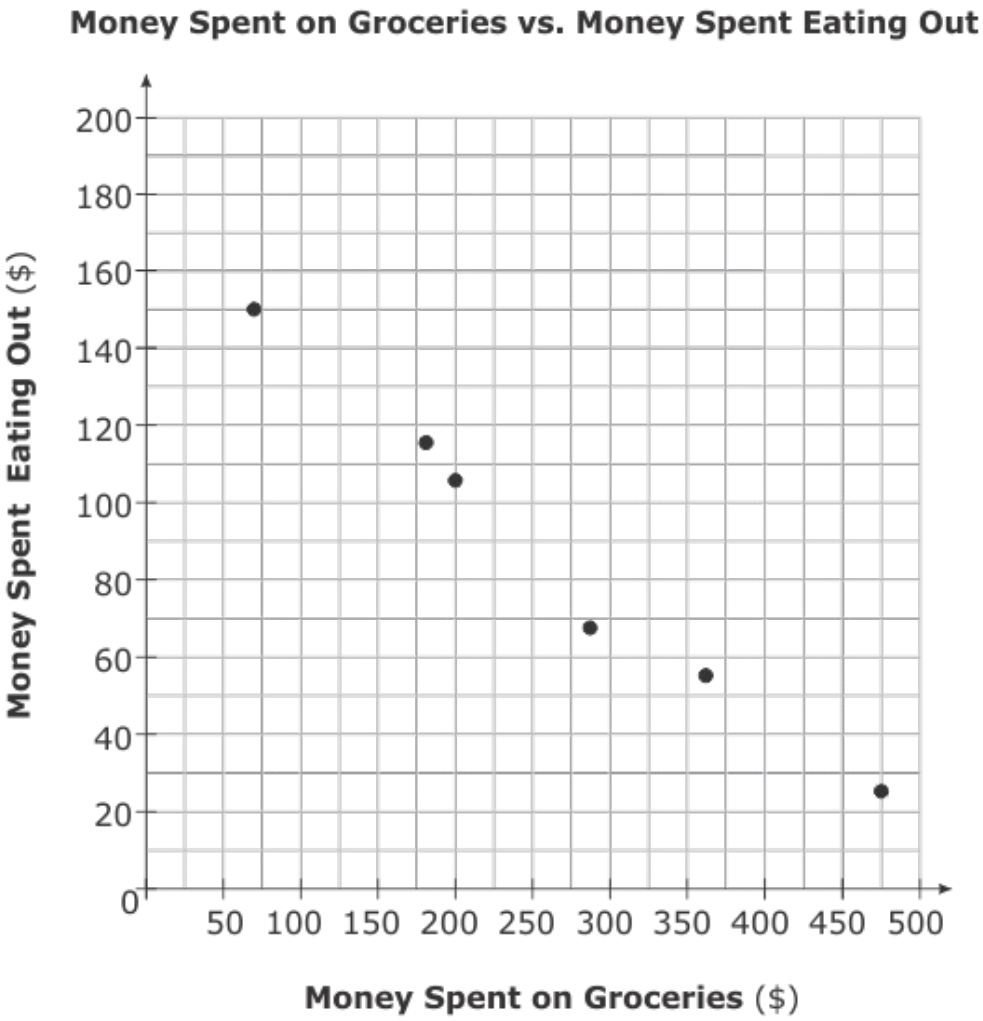
A. 130 sheets

B. 100 sheets

C. 50 sheets

D. 20 sheets

10. The scatterplot below shows the relationship between the money spent on groceries each week, *x*, and the amount of money spent eating out at restaurants, *y,* during that same week by six different families.



Using a linear model for this scatterplot, what does the *y*-intercept represent?

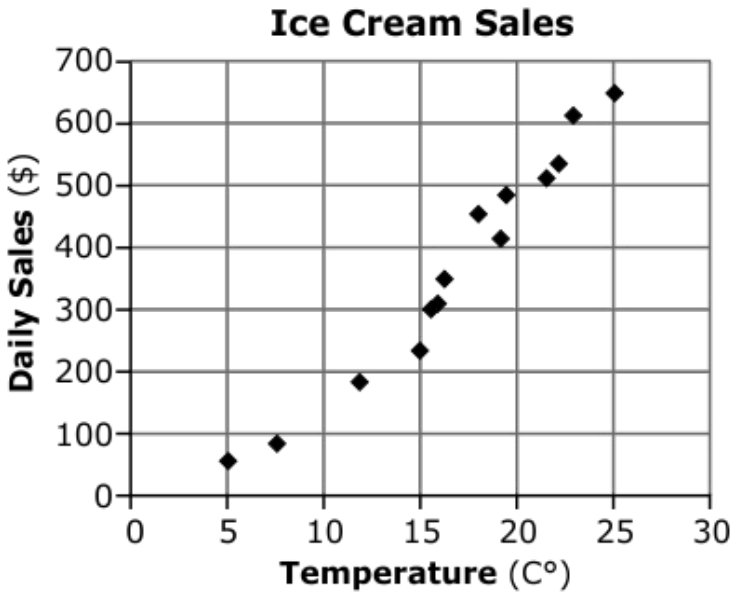
A. the amount of money spent eating out if there are no groceries purchased

B. the amount of money spent on groceries when a family does not go out to eat

C. the decrease in the amount of money spent eating out for each dollar spent on groceries

D. the increase in the amount of money spent eating out for each dollar spent on groceries

11. The scatterplot below compares the average daily sales of ice cream at a store to the outside average temperature.



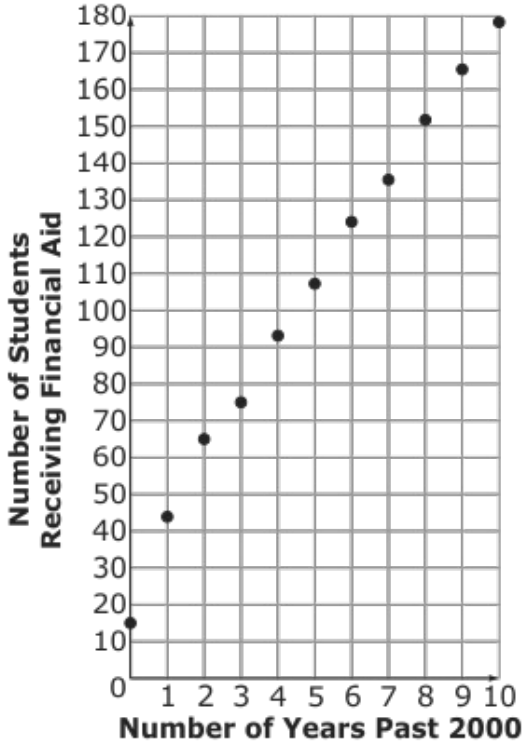
Using a linear model, what is the ***approximate*** amount of ice cream sales a store could expect if the outside temperature were 10°C?

A. $100

B. $150

C. $250

12. The scatterplot below shows the number of students receiving any type of financial aid at a school from 2000–2010.



Based on the model, which is the ***best*** prediction for the number of students who will be receiving financial aid in 2013?

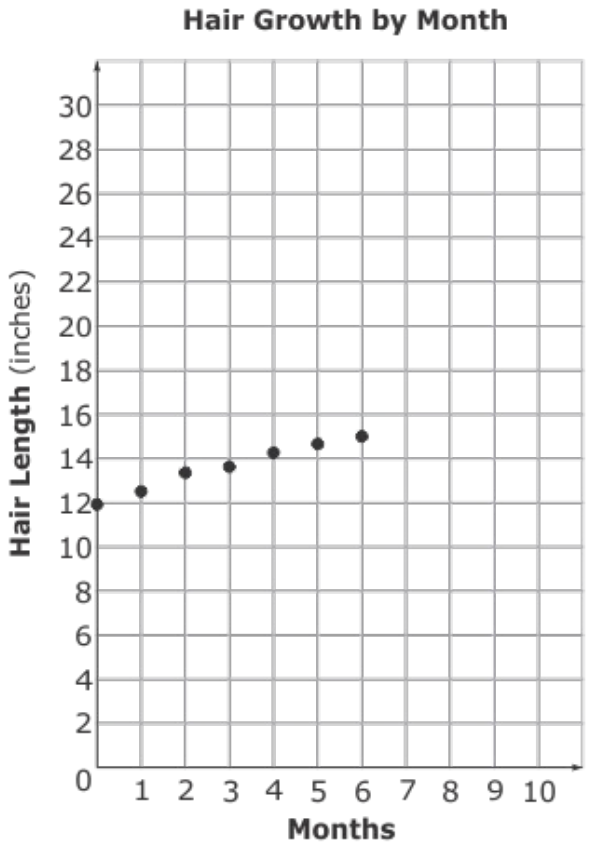
A. 200 students

B. 210 students

C. 225 students

D. 250 students

13. Tanya is growing her hair out. She records the length of her hair at the end of each month and plots the data in the graph below. The equation of a line that approximates the data is $y = \frac{1}{2}x + 12$.



Assuming she does not cut her hair, ***about*** how long can Tanya expect her hair to be after 8 months?

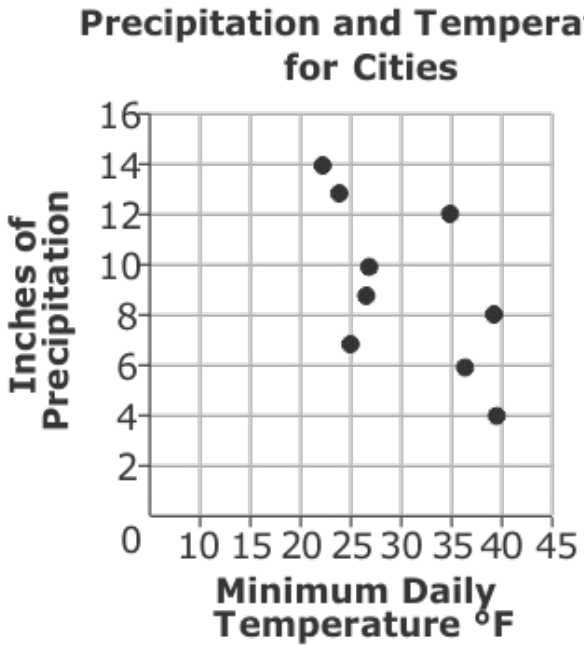
A. 14 inches

B. 16 inches

C. 20 inches

D. 28 inches

14. The scatterplot shows the amount of precipitation for several cities given the minimum temperature for those cities.



Using a linear model, ***approximately*** what would be the minimum daily temperature for a city that had 9 inches of precipitation?

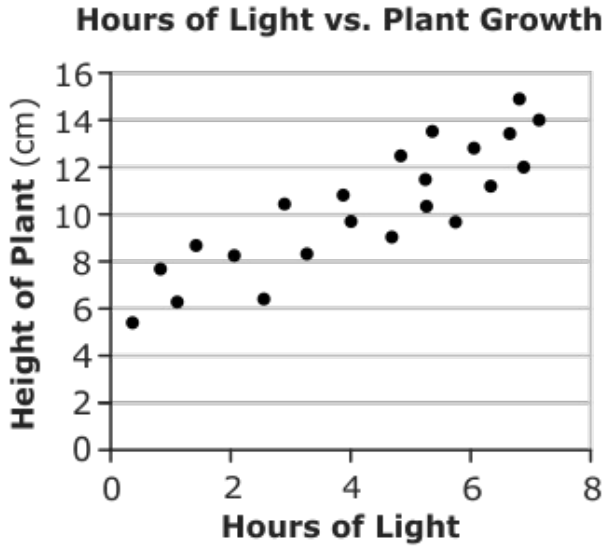
A. 20°F

B. 30°F

C. 40°F

D. 50°F

15. The scatterplot below shows the effect the amount of light a plant receives each day has on the growth of the plant over a 30-day period.



Based on a linear model, ***about*** how tall would a plant be if it received 6 hours of light each day?

A. 8 cm

B. 12 cm

C. 14 cm

16. The line of best fit for a set of data is $y = 0.39x + 45$, where y represents total cost of a utility bill and x represents hours of usage. Using this linear model, what does the slope of the line represent?

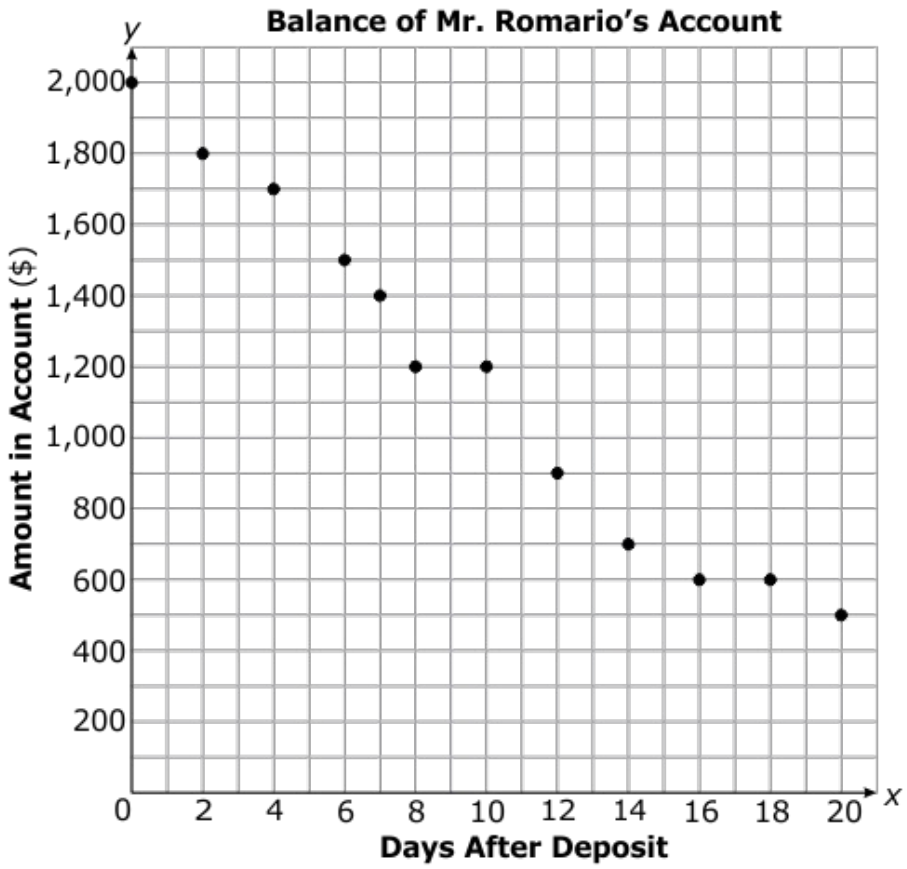
A. The flat fee is $45 for a utility bill.

B. A utility bill will cost $45.39 each month.

C. The cost for each hour of usage is $45.

D. The cost for each hour of usage is $0.39.

17. Mr. Romario receives his monthly salary by direct deposit into his checking account. The scatterplot below displays his balance, y, after x days of making the deposit.



Using a linear model that ***most closely*** represents this data, what is the meaning of the slope?

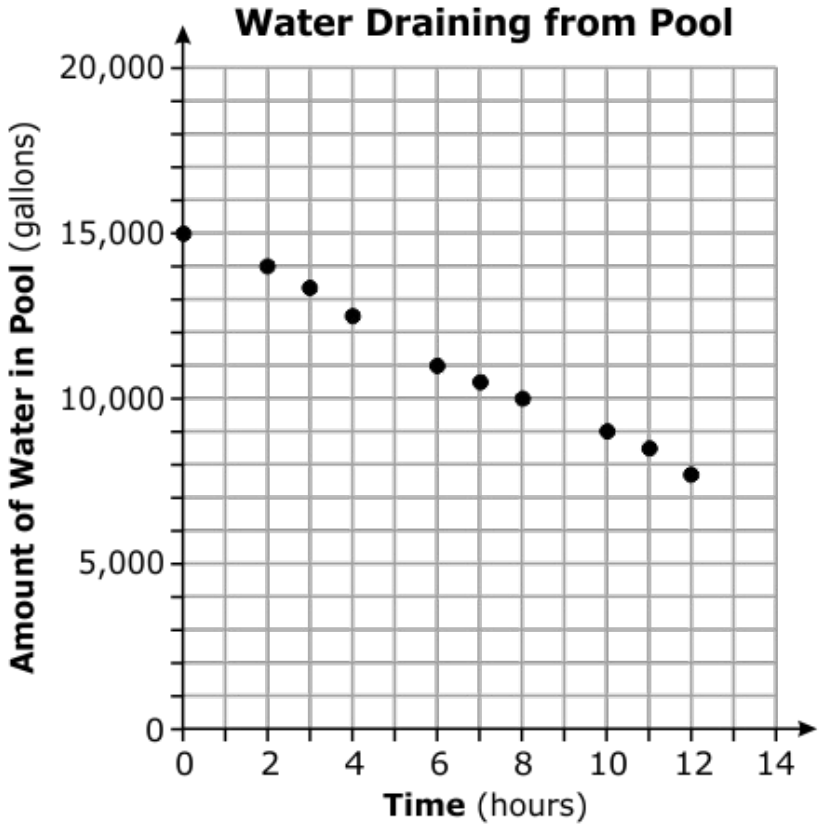
A. The account decreased by $75 every 2 days.

B. The account decreased by $75 every day.

C. The account decreased by $80 every 2 days.

D. The account decreased by $80 every day.

18. The scatterplot below shows the amount of water in a swimming pool based on the amount of time the pool is draining.



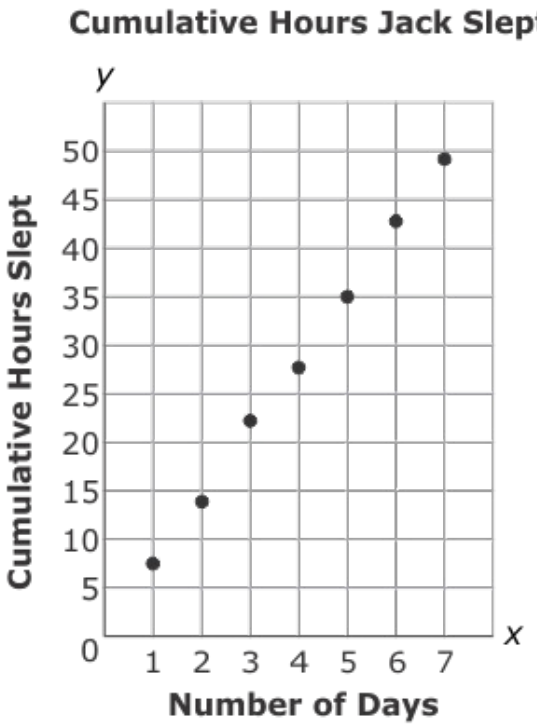
Using a linear model, what is the ***approximate*** amount of water in the pool after it has been draining for 16 hours?

A. 3,000 gallons

B. 4,000 gallons

C. 5,000 gallons

19. The graph below represents the cumulative number of hours Jack slept during a week.



Using a linear model for the data, what is the meaning of the slope?

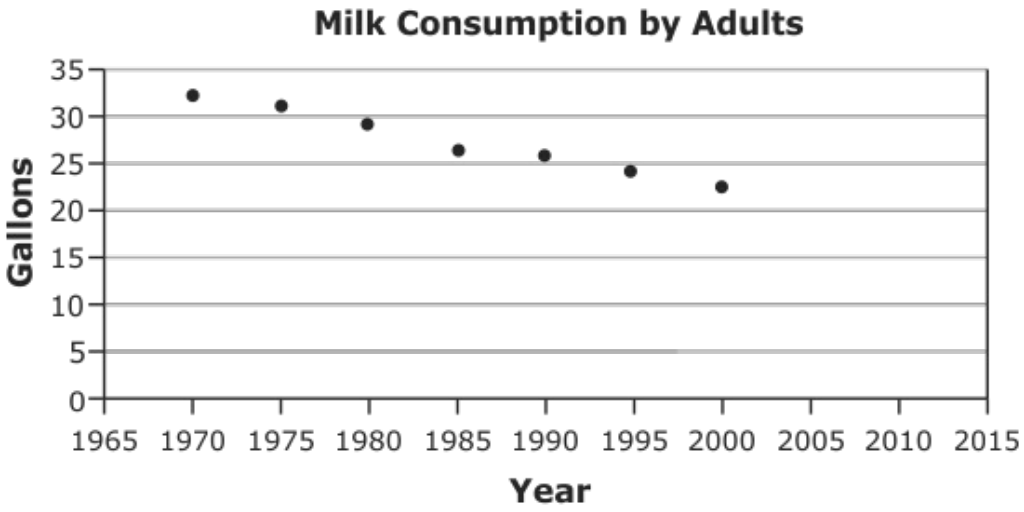
A. the amount of hours Jack slept per night

B. the amount of sleep Jack got the first night

C. the amount of nights Jack slept per week

D. the number of hours Jack was awake

20. The scatterplot shows the average amount of milk consumed by an adult over a 30-year period in the United States.



Based on the scatterplot, ***approximately*** what will be the consumption of milk for an adult in the year 2015?

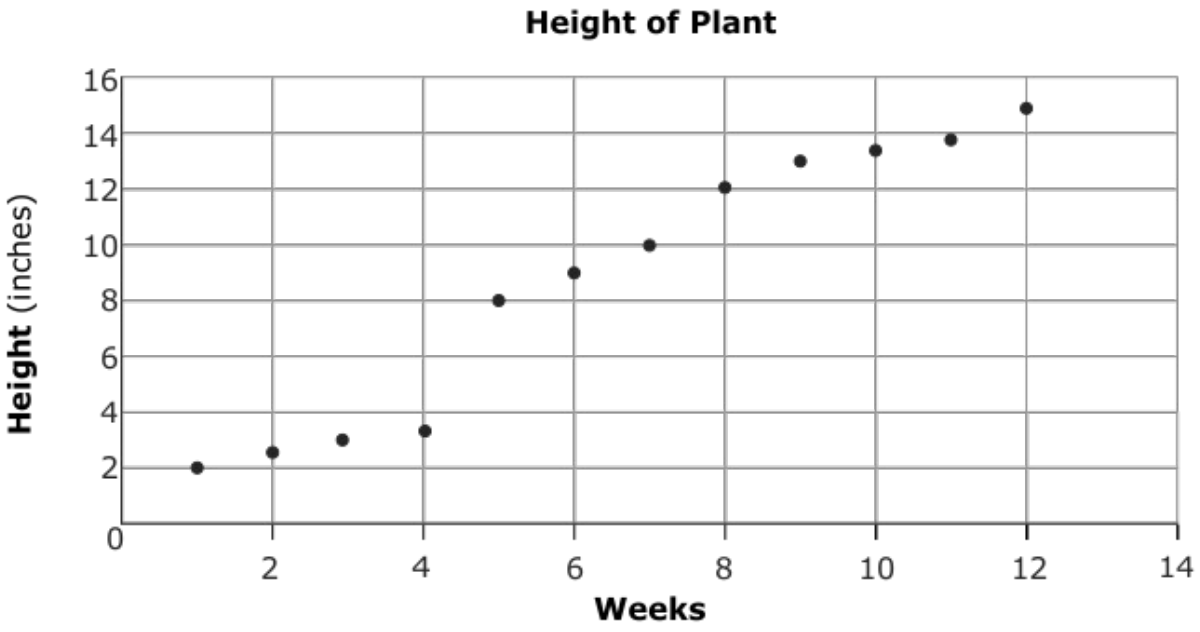
A. 10 gallons

B. 15 gallons

C. 20 gallons

D. 25 gallons

21. The graph shows the height of a plant over several weeks.



Using a linear model, what is the ***approximate*** height of the plant after 14 weeks?

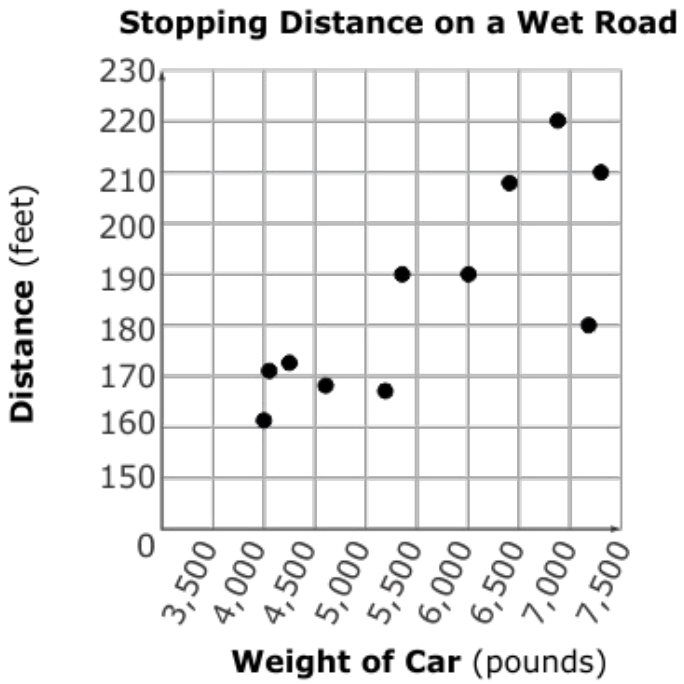
A. 11 in.

B. 14 in.

C. 17 in.

D. 21 in.

22. The scatterplot below displays the stopping distance on a wet road for 10 cars with different weights.



Which statement is true about the scatterplot?

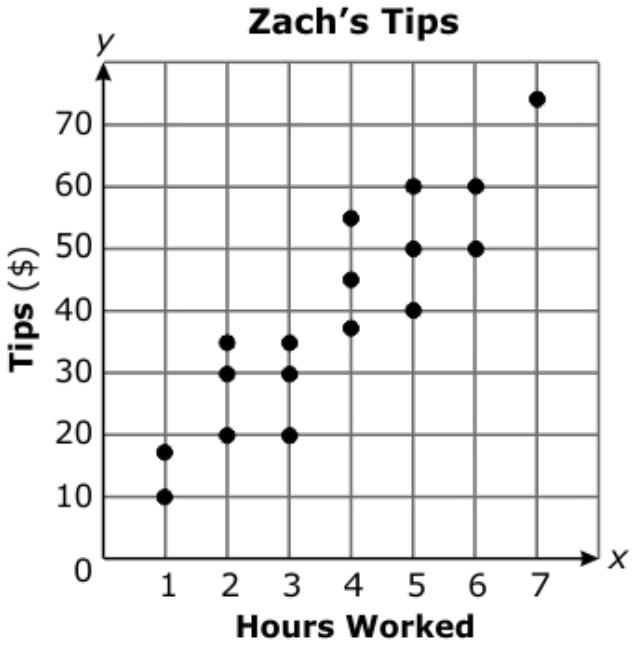
A. The heaviest car has the longest stopping distance.

B. Cars weighing more than 6,000 pounds have a stopping distance over 200 feet.

C. Cars weighing less than 5,500 pounds have a stopping distance less than 170 feet.

D. There is at least one car weighing over 6,000 pounds whose stopping distance is under 200 feet.

23. Zach works as a waiter and records his tips. He created the scatterplot below comparing the amount of his tips and the number of hours he works.



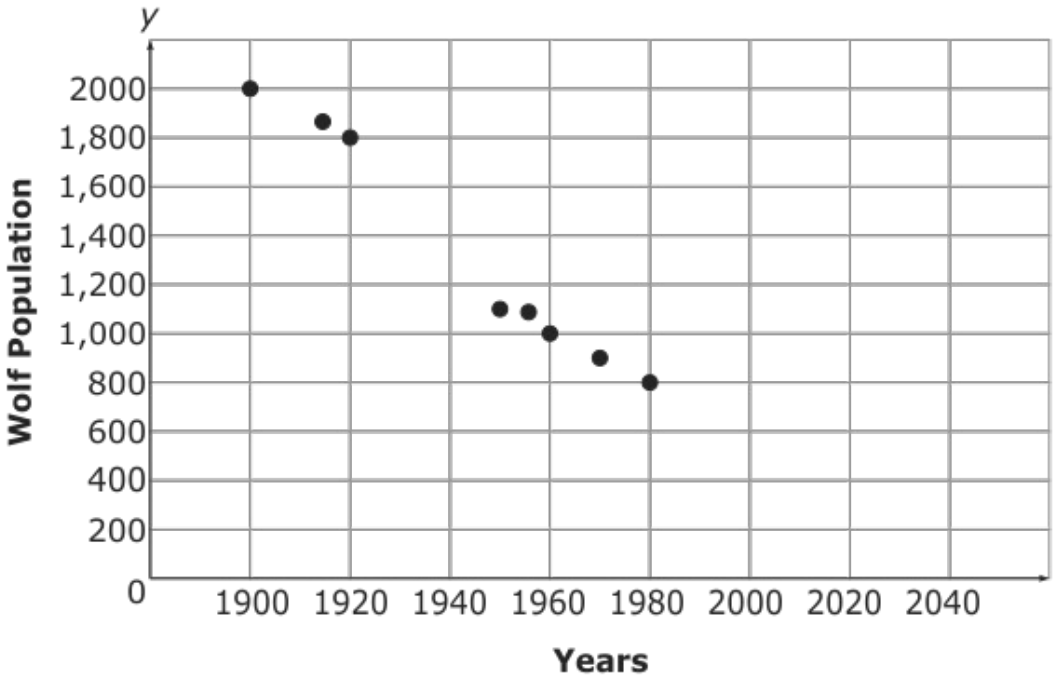
Using a linear model, ***about*** how much in tips will Zach earn if he works 8 hours?

A. $60

B. $80

C. $90

24. The graph shows the wolf population near a city.



Using a linear model, what is the ***best*** estimate of the wolf population in 2020?

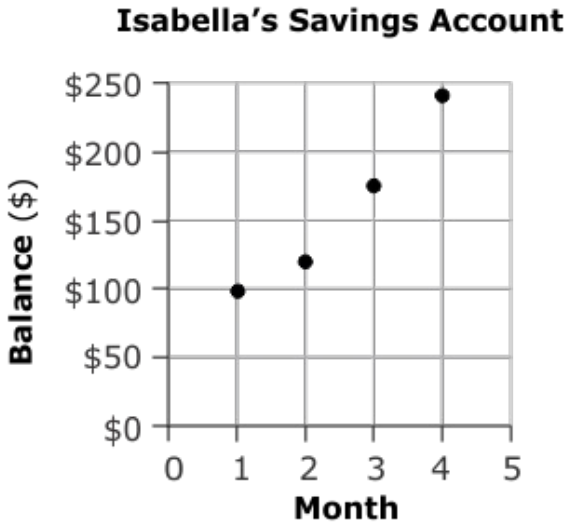
A. 100

B. 400

C. 500

D. 800

25. The graph shows Isabella's savings account over several months.



Using a linear model, what is Isabella's ***approximate*** balance in month 5?

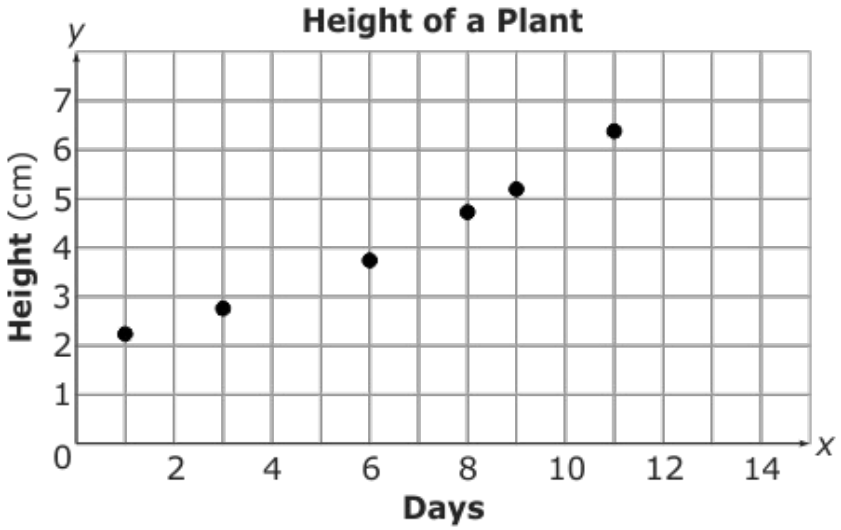
A. $200

B. $250

C. $300

D. $350

26. Taylor planted a seedling and measured its height each day. Her results are recorded in the graph below.



Using a linear model, ***approximately*** how tall will the seedling be in 20 days?

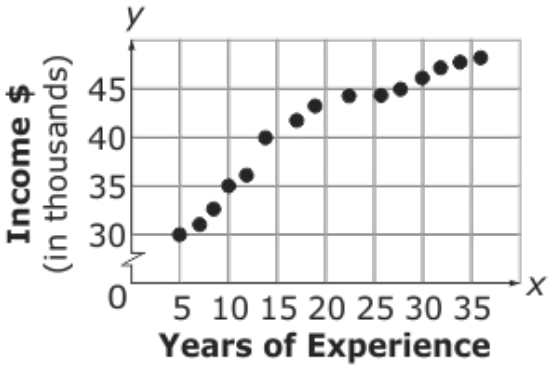
A. 16 cm

B. 14 cm

C. 12 cm

D. 9 cm

27. The scatterplot below shows the relationship between years of experience on a job and the income earned at that job.



What is the relationship between years of experience and income earned?

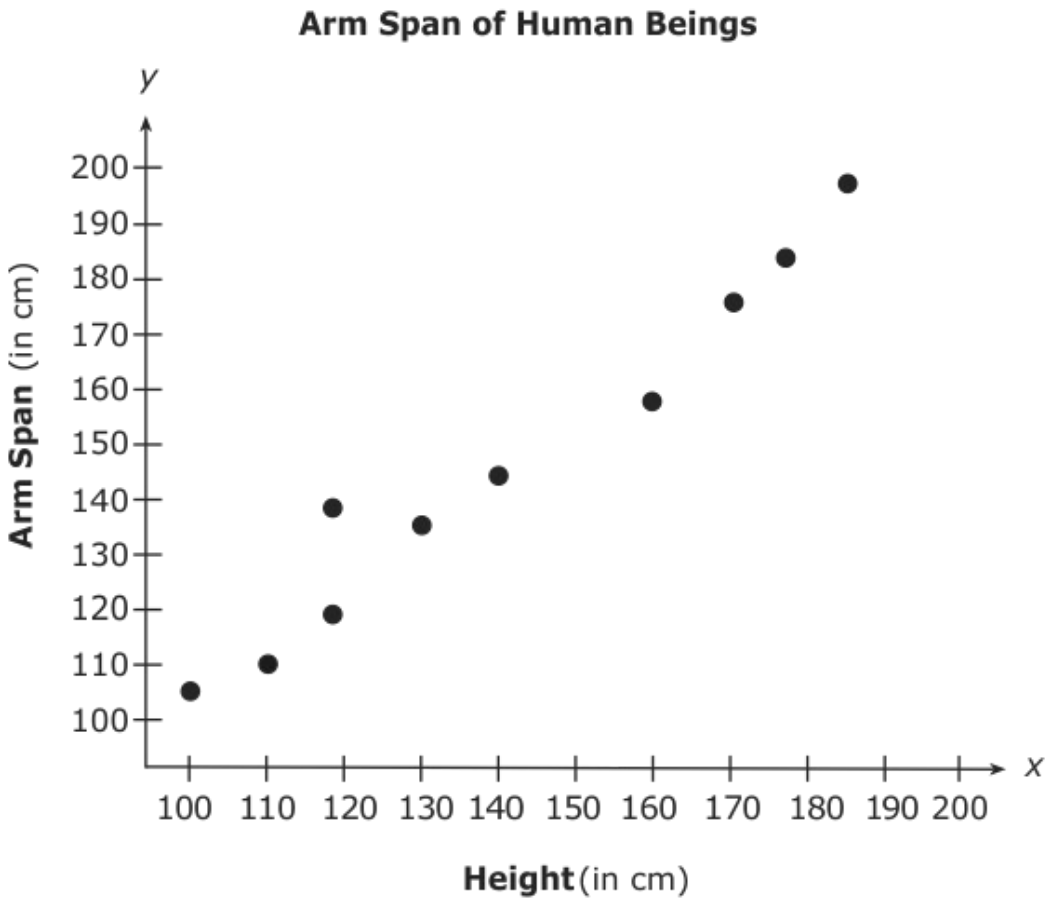
A. The income at 15 years and 25 years is the same.

B. The more years of experience a person has, the less the income.

C. The more years of experience a person has, the higher the income.

D. The income stays the same no matter how many years of experience.

28. Anna measured the heights and arm spans of 10 students in her class. She created the scatterplot below.



Based on the graph, what is the ***approximate*** arm span of a student who is 150 cm tall?

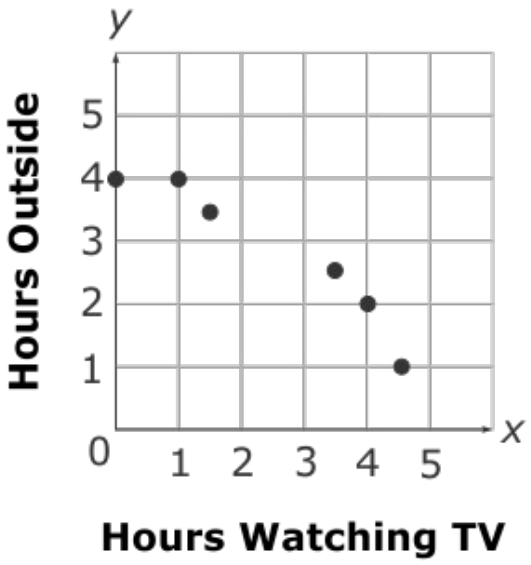
A. 130 cm

B. 150 cm

C. 170 cm

D. 190 cm

29. James asked six classmates about the amount of time they spend outside and the amount of time they spend watching TV on Saturday. He plotted the results on the graph below.



Which is the ***best estimate*** for the amount of time someone spends outside if he or she watches 2.5 hours of TV?

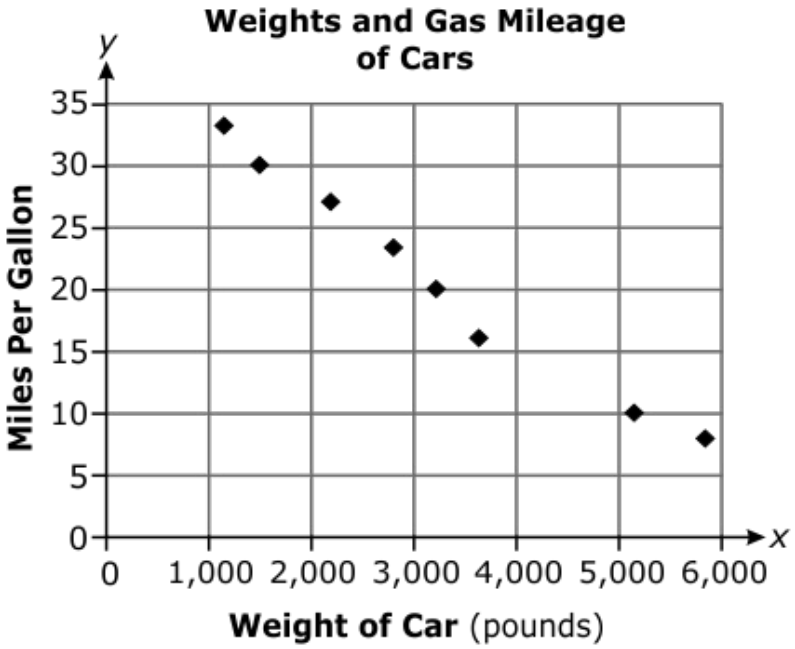
A. 1.5 hours

B. 2 hours

C. 3 hours

D. 3.5 hours

30. The scatterplot below shows the effect the weight of a car has on its gas mileage.



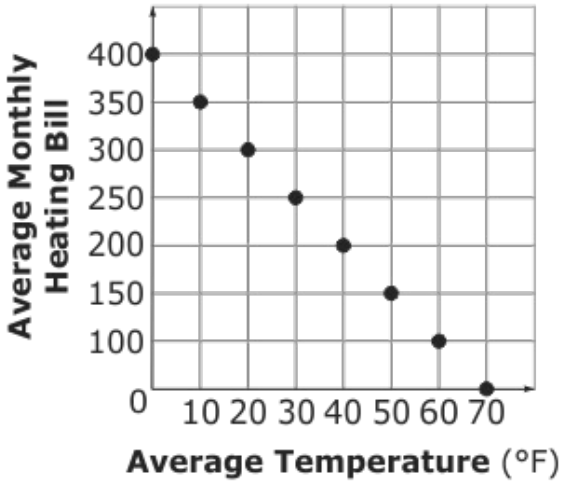
Using a linear model, ***about*** how many miles per gallon will a car get that weighs 4,500 pounds?

A. 8 miles per gallon

B. 10 miles per gallon

C. 13 miles per gallon

31. A family recorded and graphed the average temperature outside and compared it to the monthly heating bill each month.



Based on this linear model, what is the expected heating cost if the average temperature outside was 35°F?

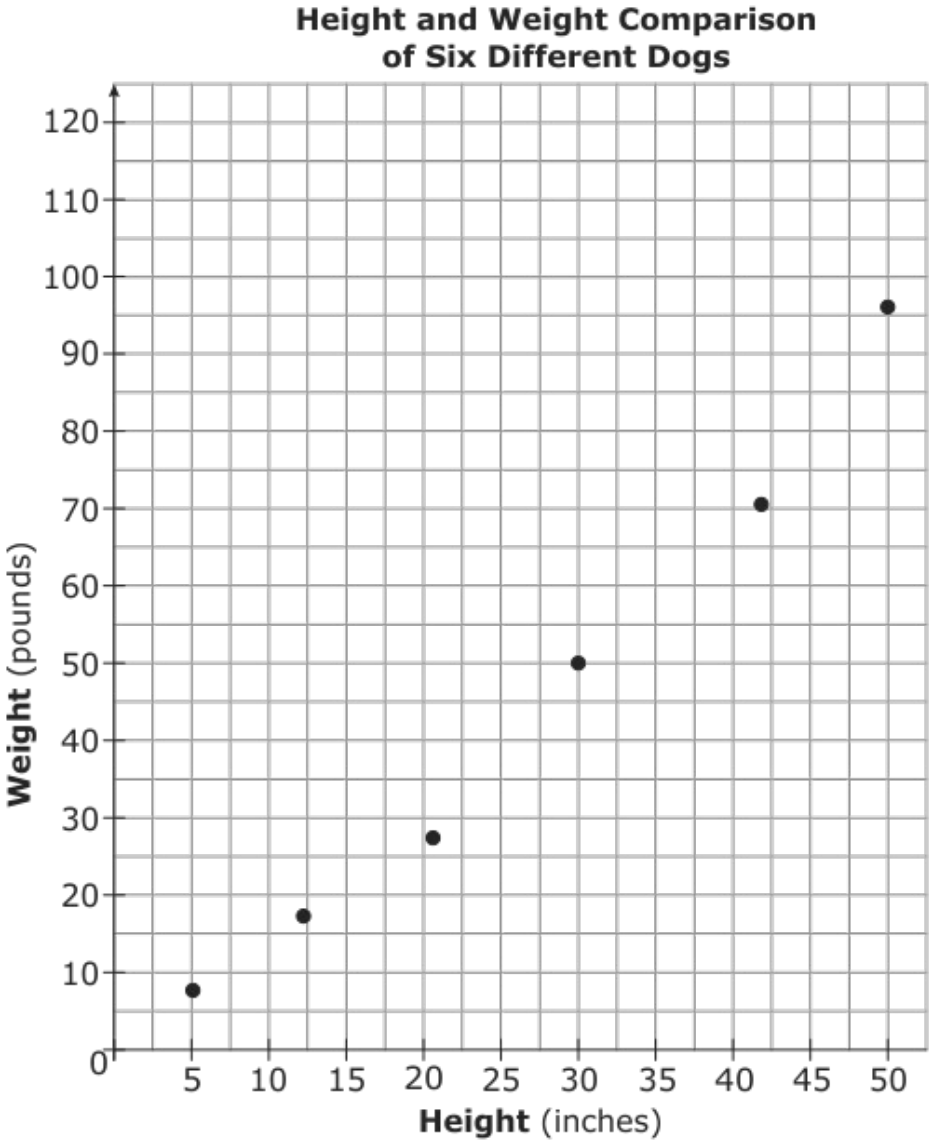
A. $75

B. $225

C. $350

D. $400

32. The scatterplot below shows the heights, x, and weights, y, of several dogs in a kennel.



Which describes the slope of the line that ***best*** fits this data?

A. The smallest dog is 5 inches tall and weighs about 8 pounds.

B. The height of a dog increases about 2 inches for each additional pound.

C. The average weight of a dog decreases for each additional inch of height.

D. The average weight of a dog increases about 2 pounds for each additional inch of height.

33. The Hernandez family is taking a trip. The table below shows the total distance they have traveled the first 4 hours of their trip.

Time (hours)	**Total Distance** (miles)
1	50
2	110
3	160
4	205

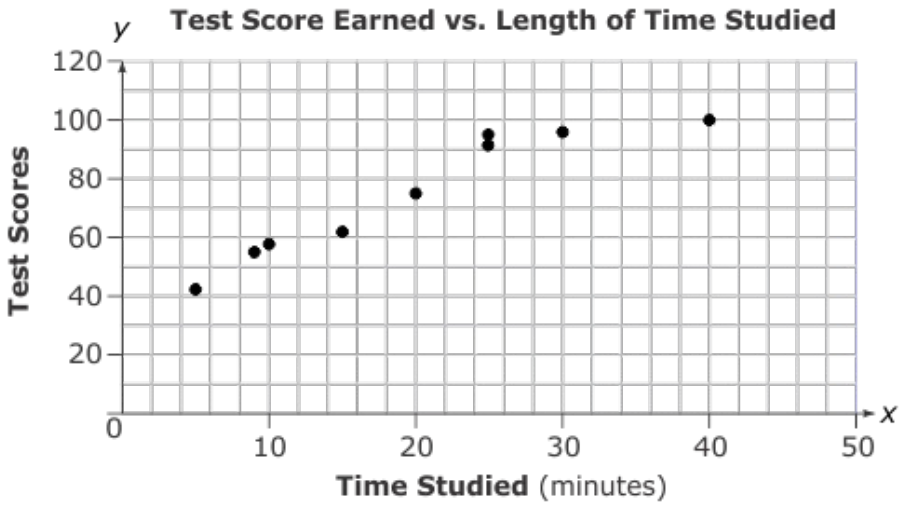
Based on the table, ***approximately*** how many miles will the Hernandez family travel in 8 hours?

A. 385 miles

B. 400 miles

C. 415 miles

34. Mr. Conley surveyed his students about the number of minutes each studied for a test. In the graph below, he recorded each student's score in a scatterplot based on the number of minutes the student studied.



Approximately how many minutes did a student study to receive a test score of a 93?

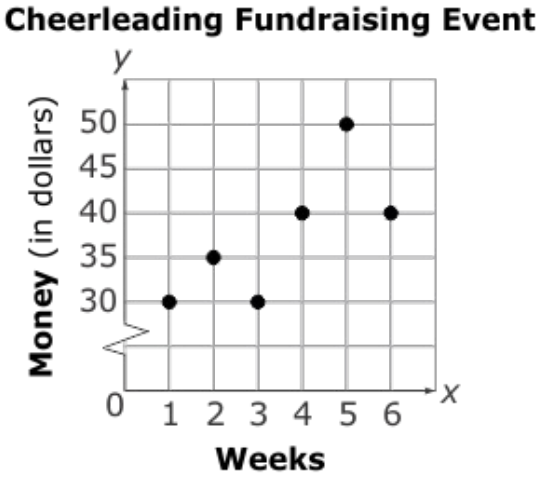
A. 20

B. 25

C. 30

D. 35

35. The graph shows the amount of money that cheerleaders raised each week over a period of six weeks.



Using a linear model, ***approximately*** how much money will the cheerleaders raise in week 7?

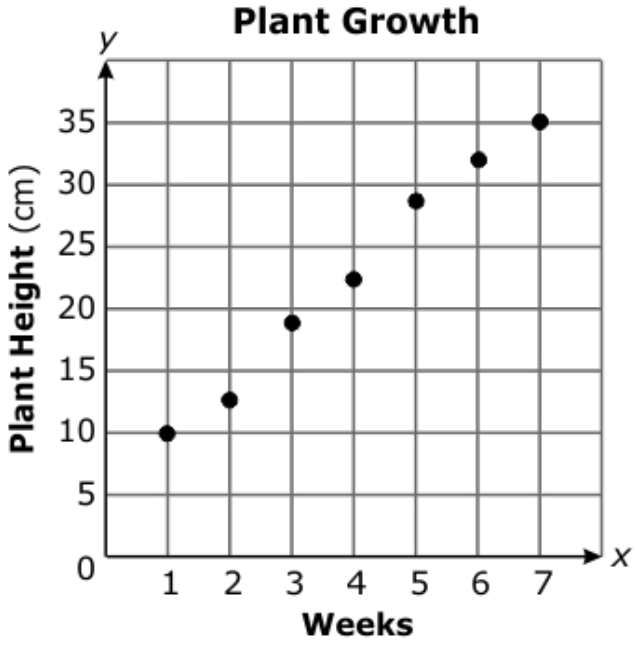
A. $40

B. $50

C. $60

D. $70

36. Emma bought a new plant. She recorded the growth of her new plant each week for 7 weeks. She created the scatterplot below with her data.



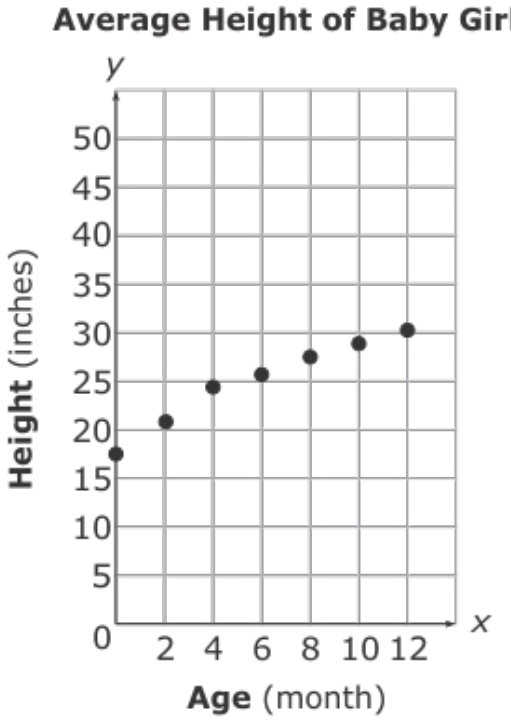
Based on a linear model, what does the slope represent?

A. The plant grows about 4 cm a week.

B. The plant grows about 10 cm a week.

C. The plant was about 5 cm tall when Emma bought it.

37. The scatterplot below represents the average height of girls from birth to 12-months of age.



Based on a linear model of the data, what is the ***approximate*** average height of a 16-month-old girl?

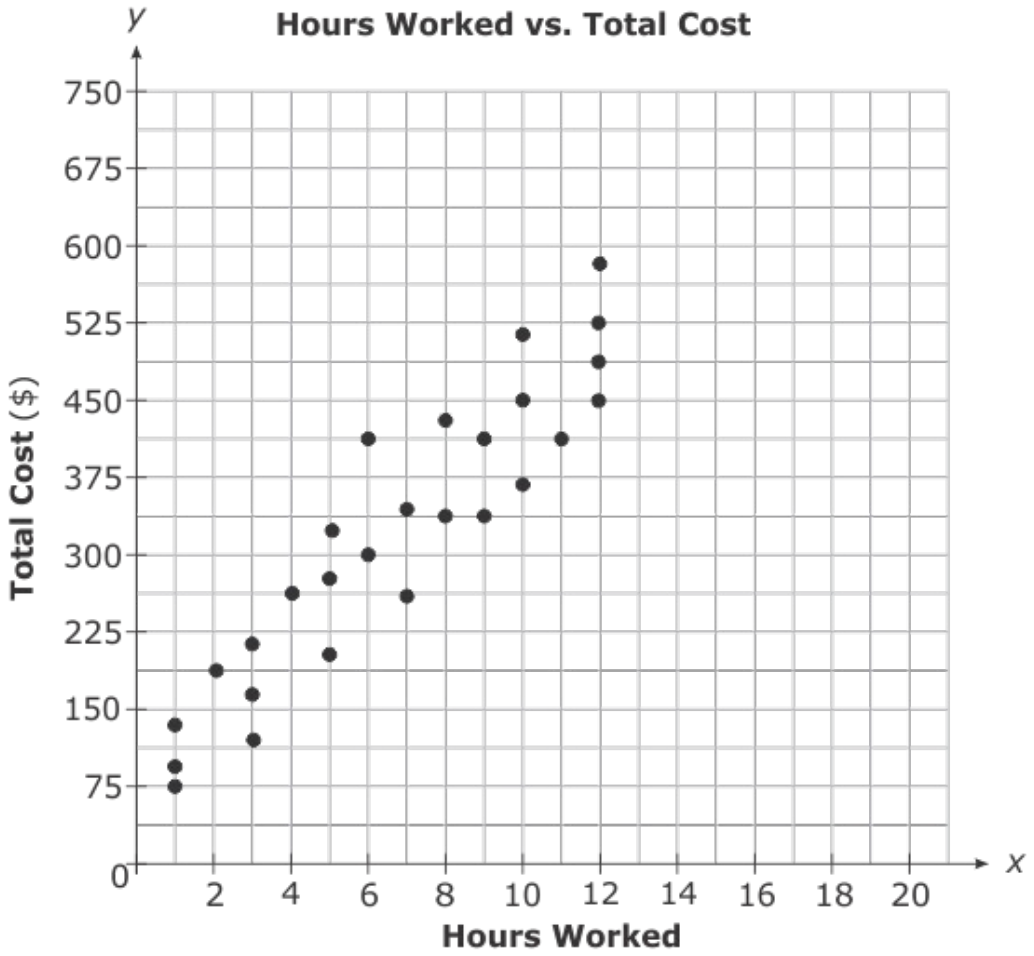
A. 17 inches

B. 31 inches

C. 35 inches

D. 40 inches

38. The scatterplot below represents the relationship between the total cost for plumbing service and the number of hours worked by plumbing companies in a city.



Using a linear model for the data, what was the ***approximate*** average hourly cost for services by plumbing companies in the city?

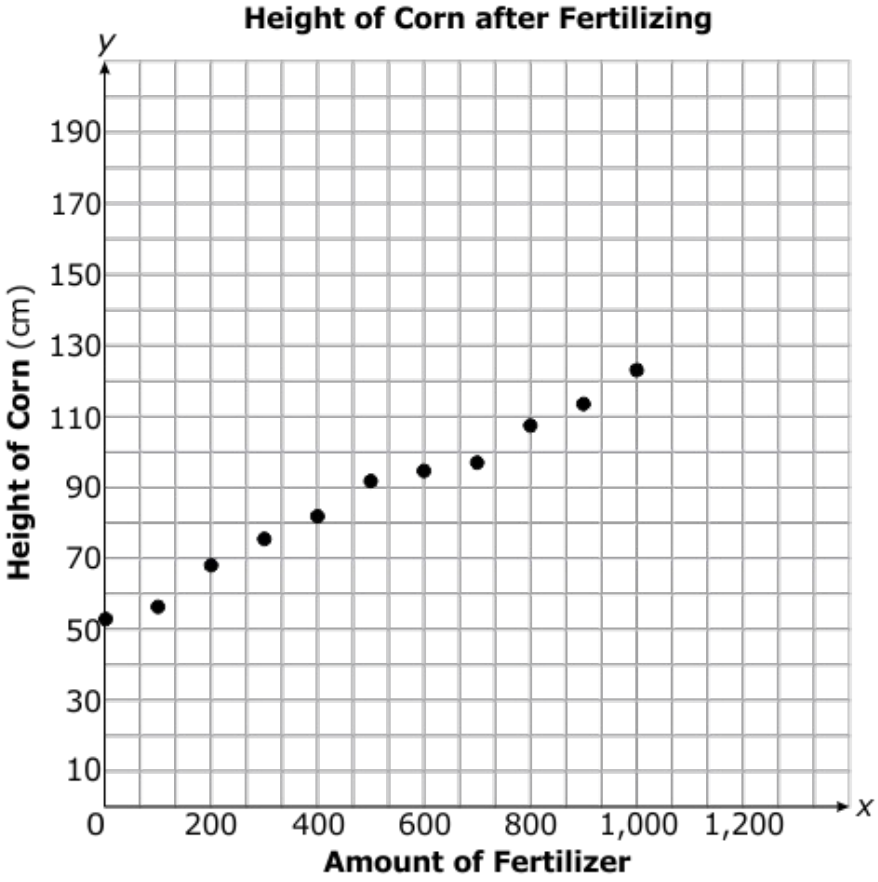
A. $100.00

B. $75.00

C. $65.00

D. $40.00

39. A scientist conducted an experiment on the effects of the height of corn after *x* amounts of fertilizer. The scatterplot below displays the heights (cm), *y*, of 3-week-old corn plants after *x* amounts (mg) of fertilizer were given to the plants.



Approximately, what was the height of a 3-week-old corn plant that received no fertilizer?

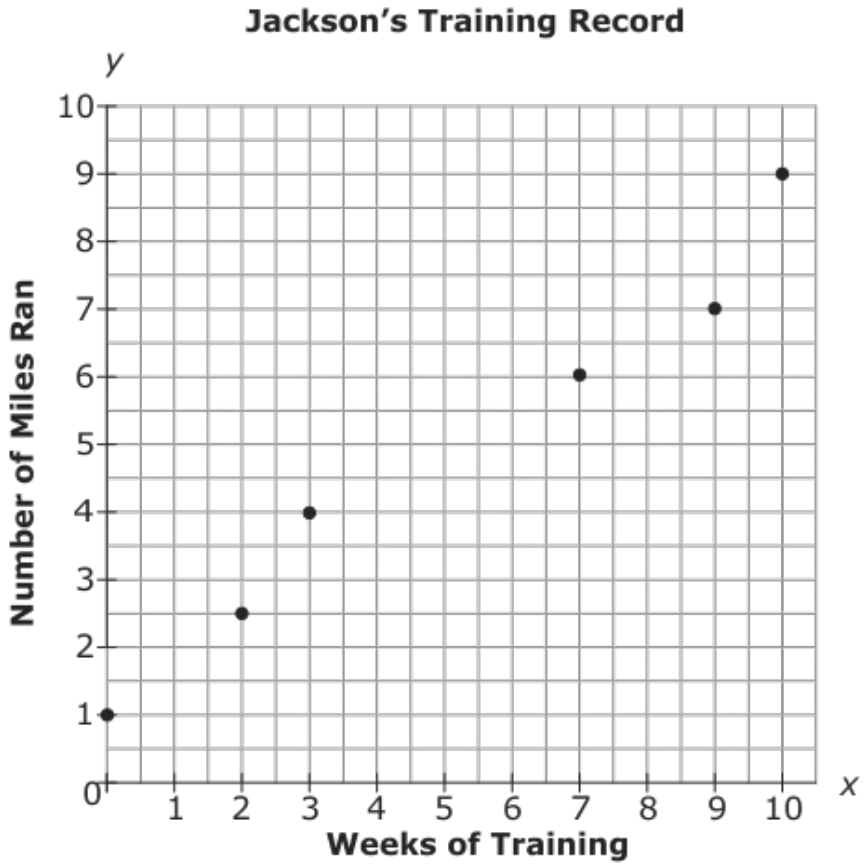
A. 0 cm

B. 34 cm

C. 52 cm

D. 68 cm

40. The scatterplot below displays the number of miles, y, Jackson ran over several weeks, x, while he was training for a competition.



Which statement describes the y-intercept?

A. the number of miles Jackson ran after one week of training

B. the number of miles Jackson ran before starting his training

C. the increase in the miles Jackson ran each week

D. the decrease in the miles Jackson ran each week