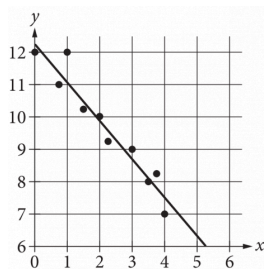


#1

ID: 1adb39f0

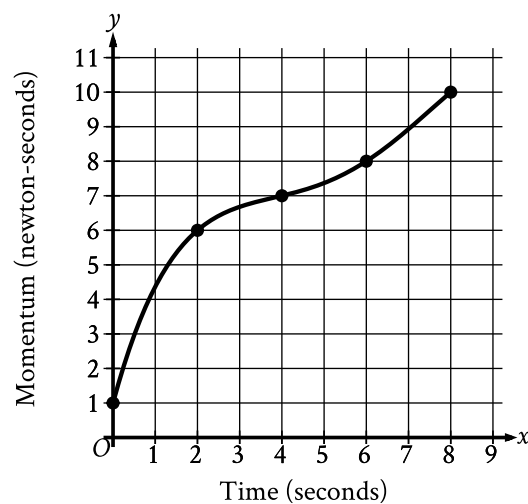
The scatterplot shows the relationship between two variables, x and y . A line of best fit for the data is also shown. Which of the following is closest to the difference between the y -coordinate of the data point with $x = 1$ and the y -value predicted by the line of best fit at $x = 1$?



- A) 1
- B) 2
- C) 5
- D) 12

#2

ID: 9bb4107c

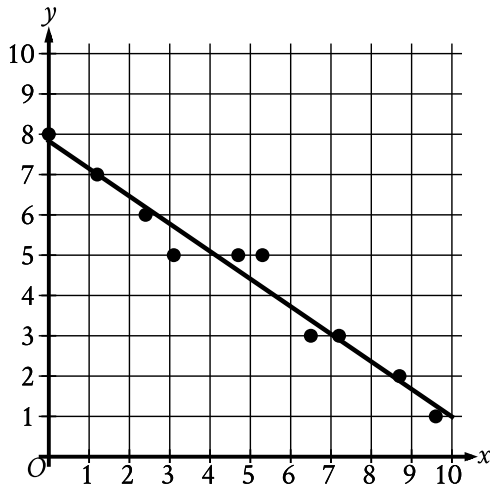


The graph shows the momentum y , in newton-seconds, of an object x seconds after the object started moving, for $0 \leq x \leq 8$. What is the average rate of change, in newton-seconds per second, in the momentum of the object from $x = 2$ to $x = 6$?

#3

ID: 2e74e403

In the given scatterplot, a line of best fit for the data is shown.



Which of the following is closest to the slope of this line of best fit?

- A) 7
- B) 0.7
- C) -0.7
- D) -7

#4

ID: 9a144a01

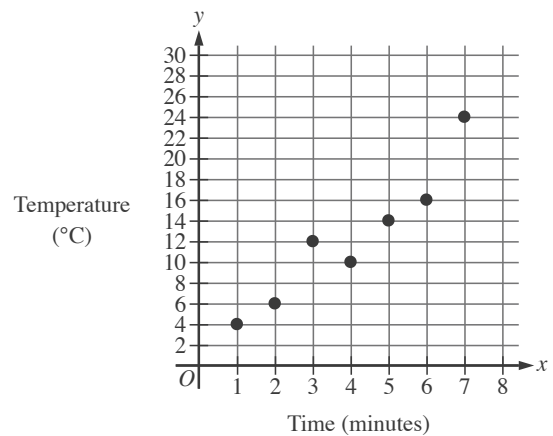
Which of the following is true about the values of 2^x and $2x+2$ for $x > 0$?

- A) For all $x > 0$, it is true that $2^x < 2x+2$.
- B) For all $x > 0$, it is true that $2^x > 2x+2$.
- C) There is a constant c such that if $0 < x < c$, then $2^x < 2x+2$, but if $x > c$, then $2^x > 2x+2$.
- D) There is a constant c such that if $0 < x < c$, then $2^x > 2x+2$, but if $x > c$, then $2^x < 2x+2$.

#5

ID: e24765e6

During a study, the temperature, in degrees Celsius ($^{\circ}\text{C}$), of the air in a chamber was recorded to the nearest integer at certain times. The scatterplot shows the recorded temperature y , in $^{\circ}\text{C}$, of the air in the chamber x minutes after the start of the study.

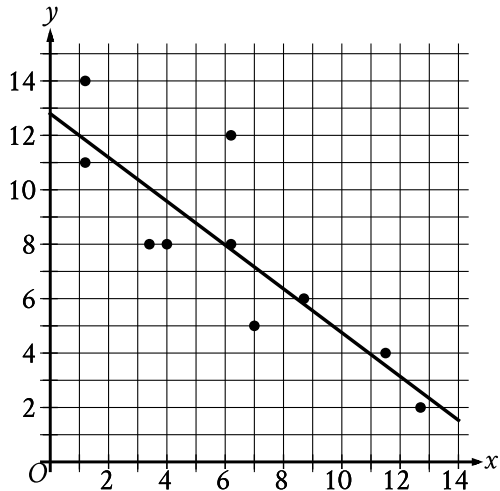


What was the average rate of change, in $^{\circ}\text{C}$ per minute, of the recorded temperature of the air in the chamber from $x = 5$ to $x = 7$?

#6

ID: 03a16790

The scatterplot shows the relationship between two variables, x and y . A line of best fit is also shown.



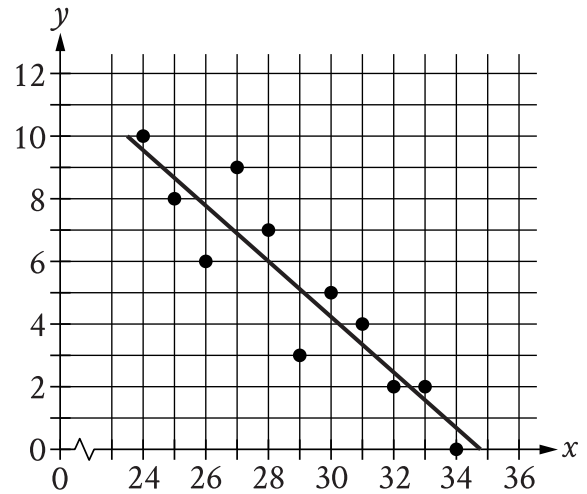
Which of the following is closest to the slope of the line of best fit shown?

- A) -2.4
- B) -0.8
- C) 0.8
- D) 2.4

#7

ID: f46139df

The scatterplot shows the relationship between two variables, x and y . A line of best fit for the data is also shown.



At $x = 25.5$, which of the following is closest to the y -value predicted by the line of best fit?

- A) 6.2
- B) 7.3
- C) 8.2
- D) 9.1

#8

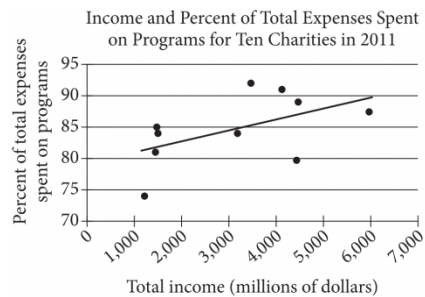
ID: 7ac5d686

An inspector begins a day of work with a large sample of shirts that need to be checked for defects. The inspector works at a constant rate throughout the morning. What type of model is best to model the number of shirts remaining to be checked for defects at any given time throughout the morning?

- A) A linear model with a positive slope
- B) A linear model with a negative slope
- C) An exponential growth model
- D) An exponential decay model

#9

ID: 7fd284ac



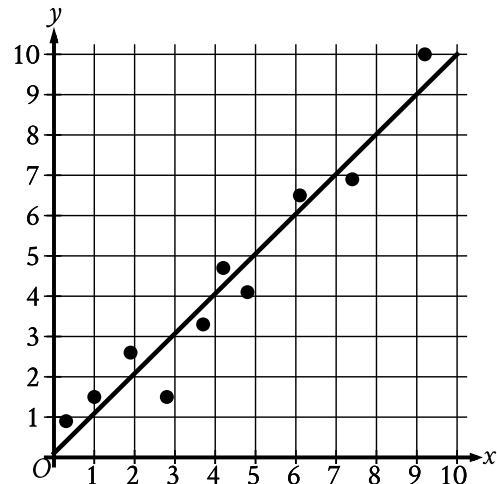
The scatterplot above shows data for ten charities along with the line of best fit. For the charity with the greatest percent of total expenses spent on programs, which of the following is closest to the difference of the actual percent and the percent predicted by the line of best fit?

- A) 10%
- B) 7%
- C) 4%
- D) 1%

#10

ID: e17babed

The scatterplot shows the relationship between two variables, x and y . A line of best fit for the data is also shown.

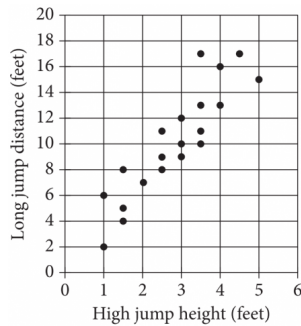


For how many of the 10 data points is the actual y -value greater than the y -value predicted by the line of best fit?

- A) 3
- B) 4
- C) 6
- D) 7

#11

ID: 3d985614

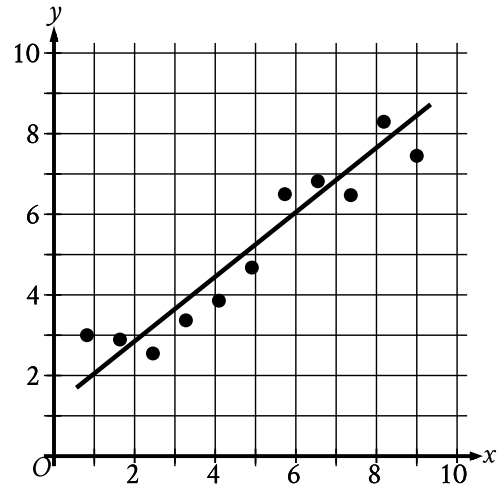


Each dot in the scatterplot above represents the height x , in feet, in the high jump, and the distance y , in feet, in the long jump, made by each student in a group of twenty students. The graph of which of the following equations is a line that most closely fits the data?

- A) $y = 0.82x + 3.30$
- B) $y = 0.82x - 0.82$
- C) $y = 3.30x + 0.82$
- D) $y = 3.30x - 3.30$

#12

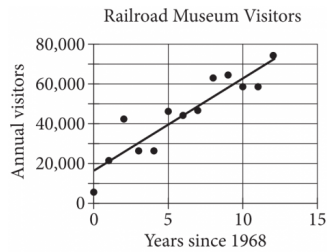
ID: ad7dbb22



The scatterplot shows the relationship between two variables, x and y . A line of best fit is also shown. For how many of the 11 data points does the line of best fit predict a greater y -value than the actual y -value?

#13

ID: 3c5b19ef



The scatterplot above shows the number of visitors to a railroad museum in Pennsylvania each year from 1968 to 1980, where t is the number of years since 1968 and n is the number of visitors. A line of best fit is also shown. Which of the following could be an equation of the line of best fit shown?

- A) $n = 16,090 + 4,680t$
- B) $n = 4,690 + 16,090t$
- C) $n = 16,090 + 9,060t$
- D) $n = 9,060 + 16,090t$

#14

ID: ab7740a8

In which of the following tables is the relationship between the values of x and their corresponding y -values nonlinear?

A)

x	1	2	3	4
y	8	11	14	17

B)

x	1	2	3	4
y	4	8	12	16

C)

x	1	2	3	4
y	8	13	18	23

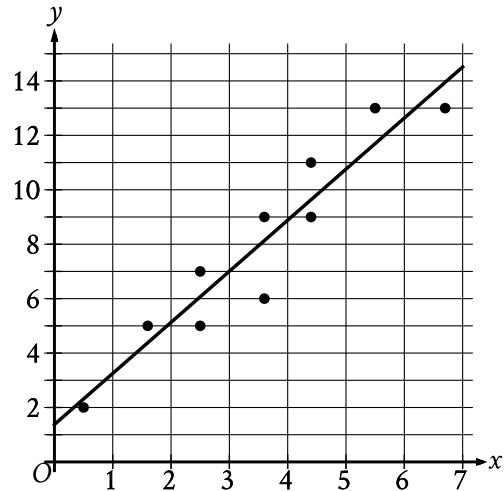
D)

x	1	2	3	4
y	6	12	24	48

#15

ID: 90ba8f98

In the given scatterplot, a line of best fit for the data is shown.

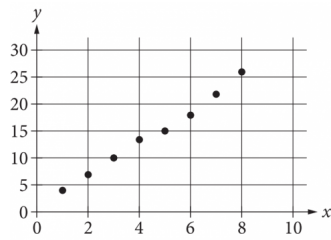


Which of the following is closest to the slope of the line of best fit shown?

- A) 0
- B) $\frac{1}{2}$
- C) 1
- D) 2

#16

ID: 9eb896c5



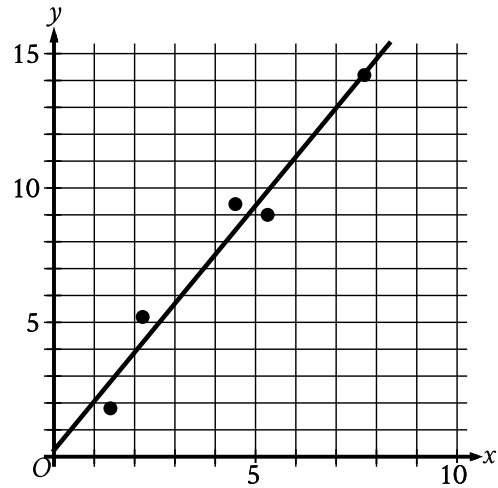
Which of the following could be the equation for a line of best fit for the data shown in the scatterplot above?

- A) $y = 3x + 0.8$
- B) $y = 0.8x + 3$
- C) $y = -0.8x + 3$
- D) $y = -3x + 0.8$

#17

ID: 4cc05491

In the given scatterplot, a line of best fit for the data is shown.



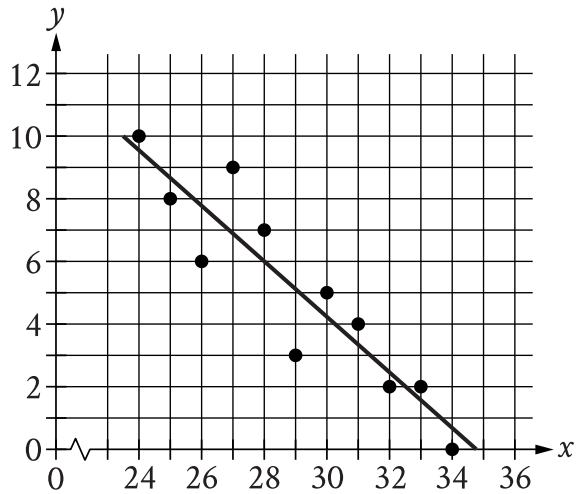
Which of the following is closest to the slope of the line of best fit shown?

- A) 0.2
- B) 0.7
- C) 1.8
- D) 2.6

#18

ID: fdfc90e4

The scatterplot shows the relationship between two variables, x and y . A line of best fit for the data is also shown.



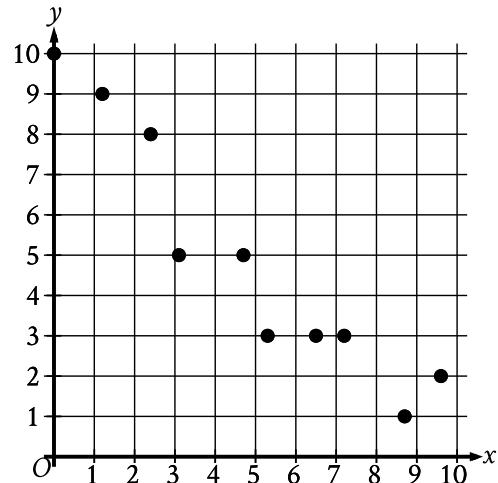
At $x = 32$, which of the following is closest to the y -value predicted by the line of best fit?

- A) 0.4
- B) 1.5
- C) 2.4
- D) 3.3

#19

ID: 50b2807e

The scatterplot shows the relationship between two variables, x and y .



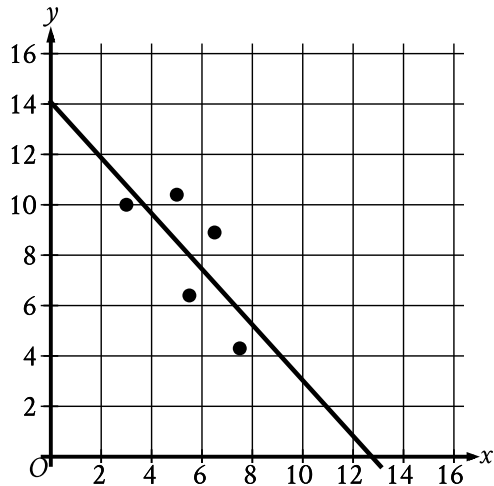
Which of the following equations is the most appropriate linear model for the data shown?

- A) $y = 0.9 + 9.4x$
- B) $y = 0.9 - 9.4x$
- C) $y = 9.4 + 0.9x$
- D) $y = 9.4 - 0.9x$

#20

ID: 24a1e6a7

The scatterplot shows the relationship between two variables, x and y . A line of best fit is also shown.



Which of the following is closest to the slope of this line of best fit?

- A) -3.3
- B) -1.1
- C) 1.1
- D) 3.3

#21

ID: 58171b5e

Each year, the value of an investment increases by 0.49% of its value the previous year. Which of the following functions best models how the value of the investment changes over time?

- A) Decreasing exponential
- B) Decreasing linear
- C) Increasing exponential
- D) Increasing linear