



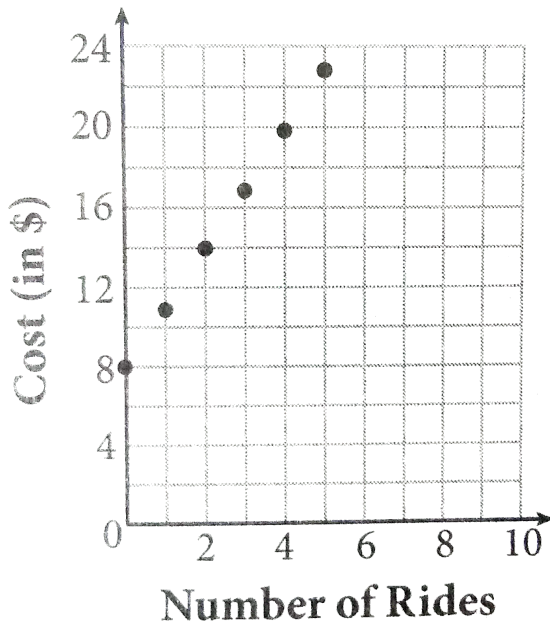
MATHS

BOOKS - KAPLAN INC MATHS (ENGLISH)

SCATTERPLOTS

Multiple Choice Question

Amusement Park Spending



1.

Wesley went to an amusement park with his family. He paid for his own admission ticket and all of the rides he rode. The scatterplot shows possible amounts that he could have paid. If a line of best fit (not shown) is used to

model the data, the equation of the line would be $y = 3x + 8$. In this scenario, what does 3 represent?

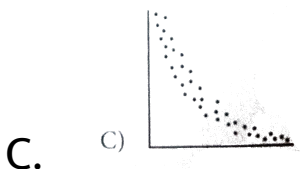
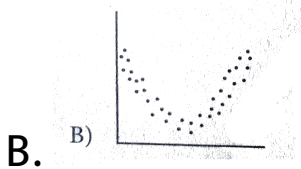
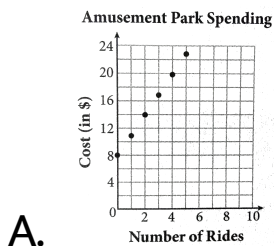
- A. The cost of one ride
- B. The number of rides Wesley rode
- C. The cost of the admission ticket
- D. The number of hours Wesley stayed at the park

Answer: A

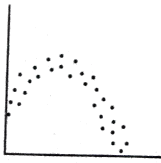


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2. The data in which of the following scatterplots would be best modeled by a quadratic function in which the x^2 term has a negative coefficient?



D. D)



Answer: D



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Round	Total Number of Participants Eliminated
1	256
2	384
3	448
4	480
5	496

3.

The table above shows the cumulative

number of participants eliminated in a national miniature golf tournament by the end of each round. Which of the following best describes the relationship between the round and the number of participants remaining in the tournament?

A. Exponential growth

B. Exponential decay

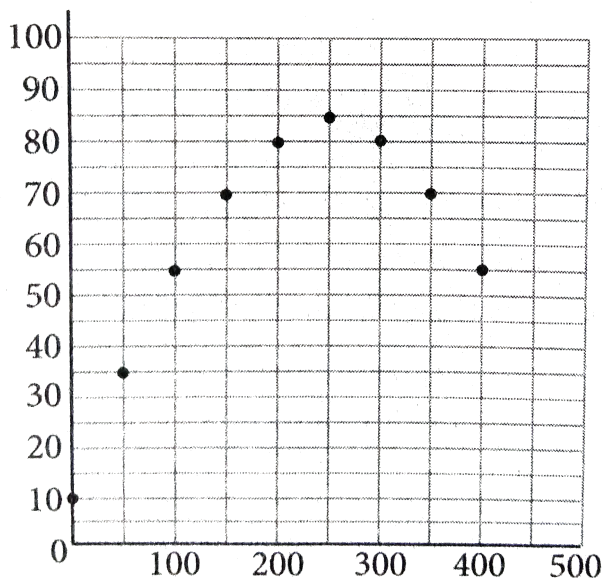
C. Linear growth

D. Linear decay

Answer: B



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4.

Nine data point were used to generate the scatterplot shown. Assuming all whole number values for the data points, which list correctly gives the domain of the data?

A. {10, 35, 55, 70, 80, 85}

B. {100, 200, 300, 400, 500}

C. {0, 50, 100, 150, 200, 250, 300, 350, 400}

D. {0, 10, 20, 30, 40, 50, 60, 70, 80, 90, 100}

Answer: C



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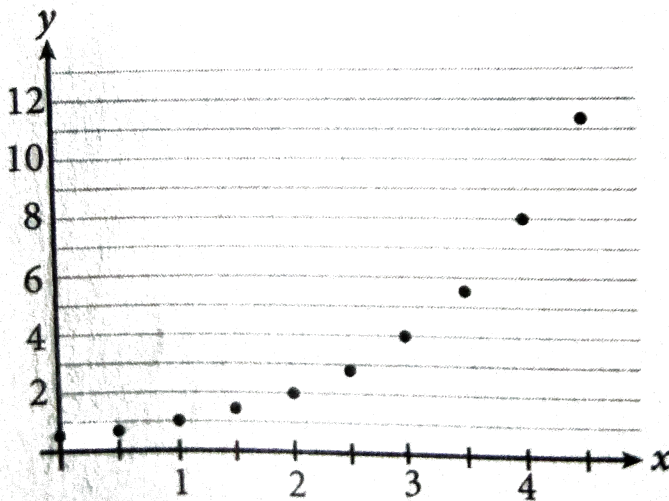
5. When water is heated in a closed system, the vapor pressure increase slowly at first and then more rapidly. As the water reaches the

boiling point of 100°C , the vapor pressure reaches 1 atm, known as 1 standard atmosphere. Which of the following models best describes the increase in vapor pressure as water is heated to its boiling point?

- A. Linear
- B. Quadratic
- C. Polynomial
- D. Exponential

Answer: D





6.

Which of the following equations best models the data shown in the scatterplot above?

A. $y = \frac{1}{2}x$

B. $y = \left(\frac{1}{2}\right)^x$

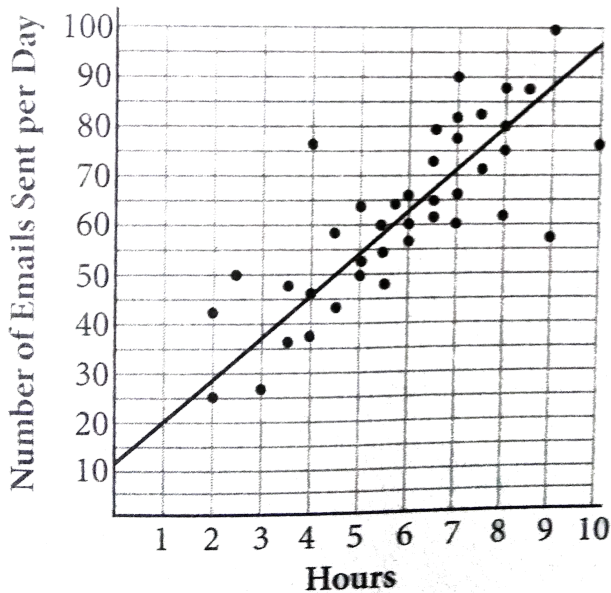
$$\text{C. } y = \frac{1}{2}(2^x)$$

$$\text{D. } y = \frac{3}{2}x - 1$$

Answer: C



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7.

The figure above shows the number of emails sent per day plotted against the number of hours an adult works on a computer per day. Which of the following best estimates the average rate of change in the number of

emails sent compared to the number of hours working on a computer?

A. 0.12

B. 1.5

C. 8.5

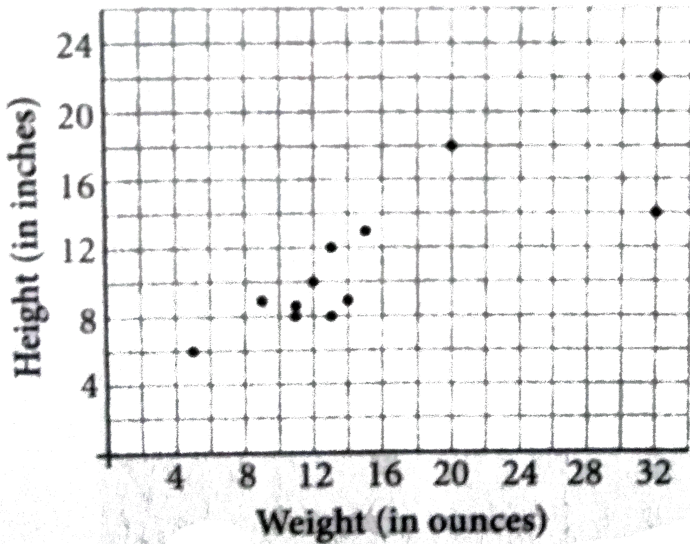
D. 12

Answer: C



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Smallest Monkeys in the World



8.

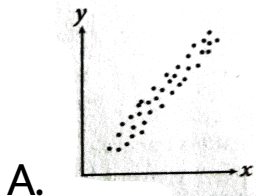
There are more than 250 known species of monkeys in the world. The scatterplot above shows the average height and weight of 12 species of particularly small monkeys, most of the which live in the Amazon Basin of South America. What is the height, in inches, of the

monkeys represented by the data point that is farthest from the line of best fit (not shown)?



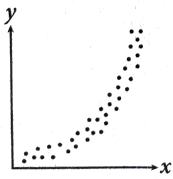
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9. Which of the following scatterplot could be modeled by the equation $y = \frac{a}{b^x}$, where a and b are constant such that $a > 1$ and $x < -1$?



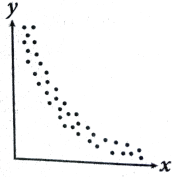
B.

B)



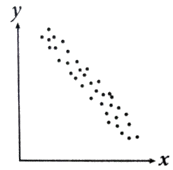
C.

C)



D.

D)



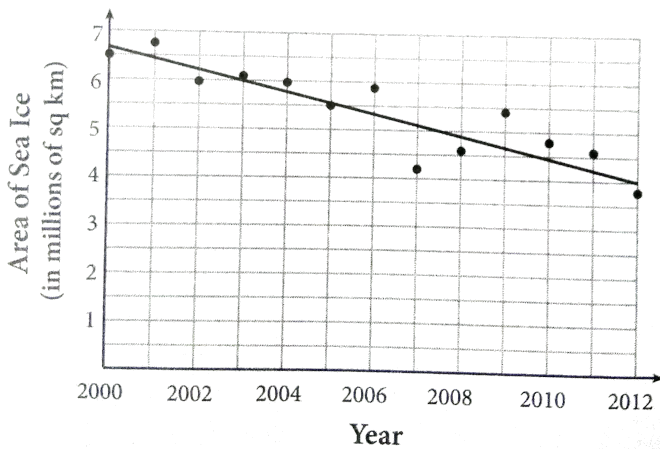
Answer: B



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10. Sea ice extent is a measurement of the area of ocean with at least 15% sea ice. The graph below shows data for the extent of Arctic sea ice between 2000 and 2012 as reported by the National Snow and Ice Data Center. The line of best fit is also shown. The equations of the line is $A(t) = -0.187t + 380.5$, where $A(t)$ represents the area of measurement sea ice in the Arctic Ocean in the year t .

Arctic Sea Ice



Q. Based on the equation of the line of best fit, which of the following statements accurately of measurable Arctic sea ice during the given times period?

A. The amount of sea ice increased approximately 187,000 square kilometers per year.

B. The amount of sea ice increased approximately 187 million square kilometers per year.

C. The amount of sea ice decreased approximately 187,000 square kilometers per year.

D. The amount of sea ice decreased approximately 187 million square kilometers per year.

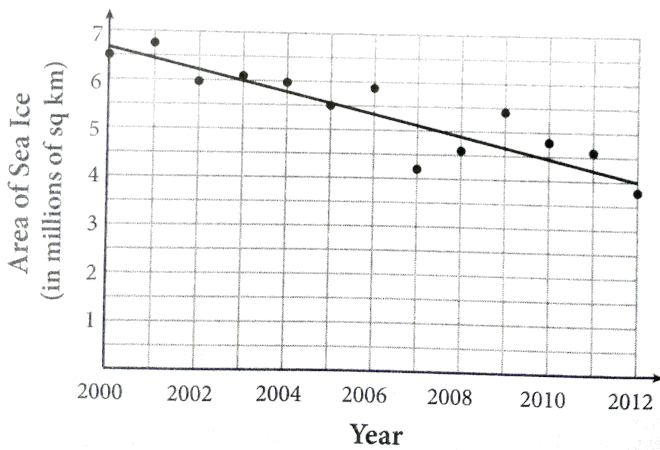
Answer: C



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11. Sea ice extent is a measurement of the area of ocean with at least 15% sea ice. The graph below shows data for the extent of Arctic sea ice between 2000 and 2012 as reported by the National Snow and Ice Data Center. The line of best fit is also shown. The equations of the line is $A(t) = -0.187t + 380.5$, where $A(t)$ represents the area of measurement sea ice in the Arctic Ocean in the year t .

Arctic Sea Ice



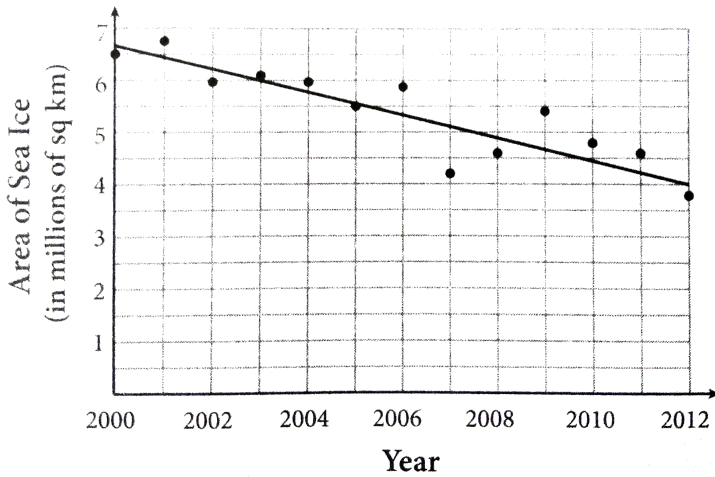
Q. Assuming the trend of the data continues, what is the predicted area, in millions of square kilometers, of measurable Arctic sea ice in the year 2020?



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12. Sea ice extent is a measurement of the area of ocean with at least 15% sea ice. The graph below shows data for the extent of Arctic sea ice between 2000 and 2012 as reported by the National Snow and Ice Data Center. The line of best fit is also shown. The equations of the line is $A(t) = -0.187t + 380.5$, where $A(t)$ represents the area of measurement sea ice in the Arctic Ocean in the year t .

Arctic Sea Ice



Q. Assuming the trend of the data continues in what year will the measurable sea ice in the Arctic Ocean cease to exist?

A. 2026

B. 2034

C. 2066

D. 2380

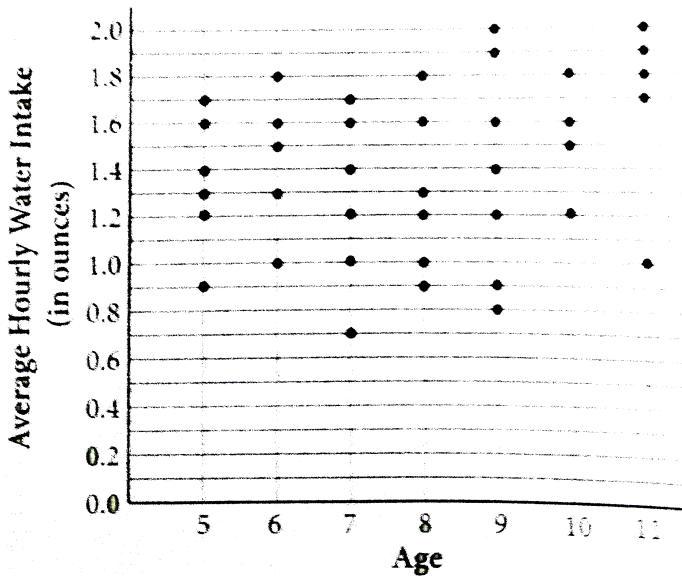
Answer: B



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13. A dietician working in the childrens ward at a hospital is monitoring the water intake of all the patients in the ward. The total water intake for each patient is recorded throughout the day and then averaged over the 24-hour period. The results are recorded in the

scatterplot, where each dot represents the average hourly water intake for one child.



Q. Which of the following ages has the greatest range of values for the average hourly water intake?

A. Age 5

B. Age 6

C. Age 8

D. Age 11

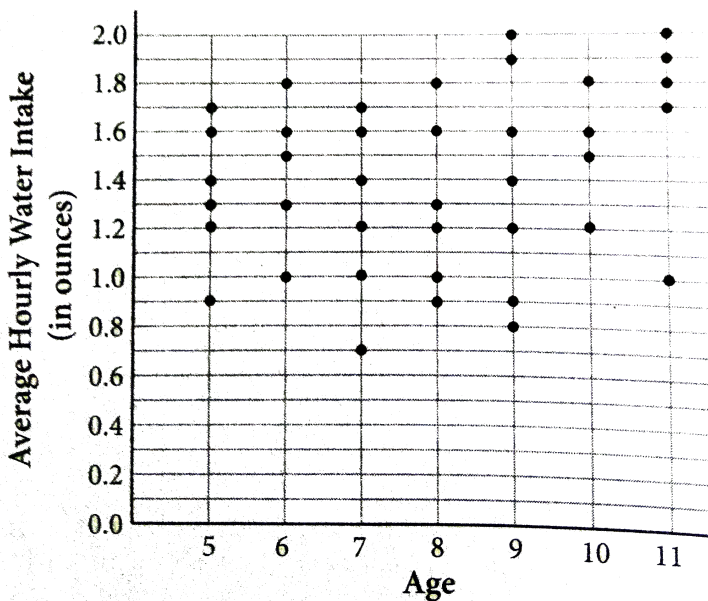
Answer: D



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14. A dietician working in the childrens ward at a hospital is monitoring the water intake of all the patients in the ward. The total water intake for each patient is recorded throughout

the day and then averaged over the 24-hour period. The results are recorded in the scatterplot, where each dot represents the average hourly water intake for one child.



Q. A child between the ages of 5 and 8 should consume at least 1 liter of water per day. Based on the data presented in the scatterplot, what

percent of the children, age 5-8, in the ward consumed less than the daily-recommended amount? (Note: There are 24 hours in one day and approximately 33.814 ounces is 1 liter.)

A. 0.35

B. 0.6

C. 0.7

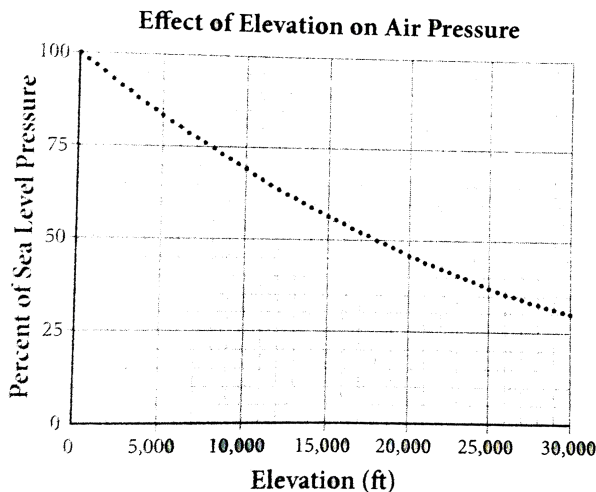
D. 0.85

Answer: B



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15. As the elevation above sea level increase, the corresponding air pressure decrease. A scatterplot comparing elevations, in feet, to air pressure, as a percent of sea level pressure, is shown below.



Q. Elevations above 8,000 meters are said to be in the "death zone", a range of elevations in

which oxygen levels are not high enough to sustain human life. What is the approximate air pressure (as a percent of sea level pressure) at the death zone threshold?(Note: 1 meter=3.28 feet)

A. 0.35

B. 0.5

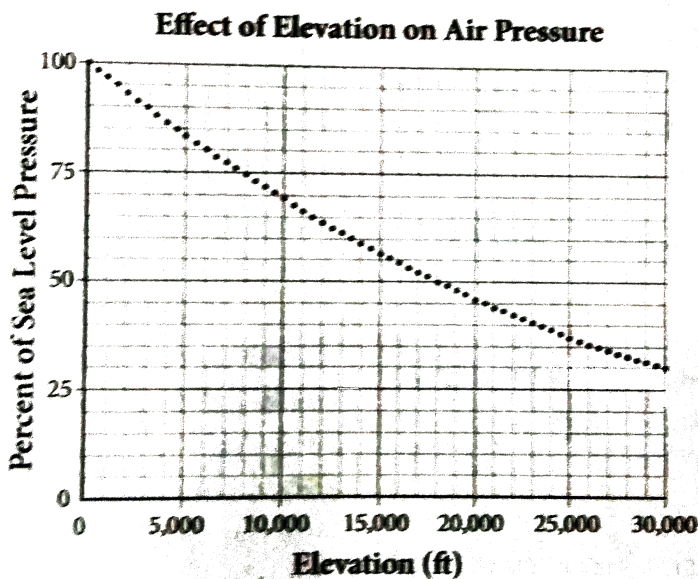
C. 0.7

D. 0.92

Answer: A



16. As the elevation above sea level increase, the corresponding air pressure decrease. A scatterplot comparing elevations, in feet, to air pressure, as a percent of sea level pressure, is shown below.



Q. Air pressure is sometimes measured in inches of mercury. If sea level air pressure measures as 29.2 inches of mercury, what is the approximate difference, in inches of mercury, between the pressure at sea level and the pressure at the death zone threshold?

A. 7.6

B. 10.2

C. 19.0

D. 21.6

Answer: C



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