

Chapter Test- Scatter Plots, Best Fit Lines, Parallel and Perpendicular**Multiple Choice**

Identify the choice that best completes the statement or answers the question.

Write the equation of the line that passes through the given point and is parallel to the equation.

- _____ 1. $(5, -1)$, $y = -\frac{3}{4}x + 1$
- a. $y = \frac{11}{4}x + \frac{3}{4}$
- b. $y = \frac{4}{3}x + \frac{11}{5}$
- c. $y = -\frac{3}{4}x + \frac{11}{4}$
- d. $y = -\frac{3}{4}x - \frac{11}{4}$

Explain how you made your choice.

United States Birth Rate												
Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Birth Rate (per 1000)	16.7	16.3	15.9	15.5	15.2	14.8	14.7	14.5	14.6	14.5	14.7	14.5

Source: National Center for Health Statistics, U.S. Dept. of Health and Human Services

- _____ 2. Let x represent the number of years since 1990 with $x = 0$ representing 1990. Let y represent the birth rate per 1000 population. Which equation best describes the line that fits the points representing 1992 and 2000?
- a. $y = -0.15x + 16.2$
- b. $y = 0.15x + 16.2$
- c. $y = -0.15x - 15.6$
- d. $x = -0.15y + 16.2$

Explain the meaning of the slope and the y-intercept as it pertains to the US birth rate from the chart.

- _____ 3. Predict the birthrate in 2005. Round your answer to the nearest tenth, if necessary.
- a. 14.5
- b. 13.1
- c. 15.1
- d. 14.0

Multiple Response

Identify one or more choices that best complete the statement or answer the question.

Which equations are perpendicular to the given equation. (Choose all that apply).

- _____ 4. $(4, 4), 2x - y = 4$
- $y = 1/2x + 6$
 - $y = -1/2x + 6$
 - $x + 2y = 6$
 - $4x + 8y = 6$
 - $y = 2x + 6$

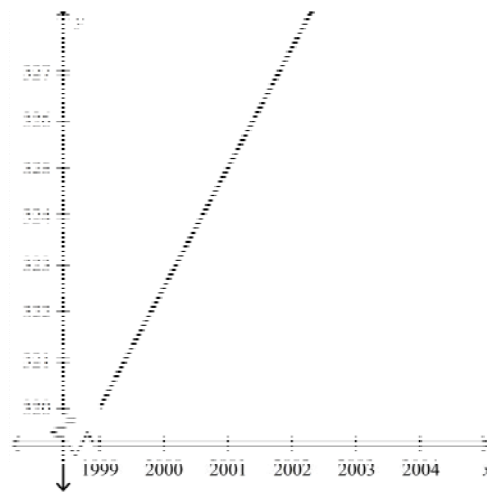
Short Answer

5. Determine which value is greater for the following items:

ITEM 1

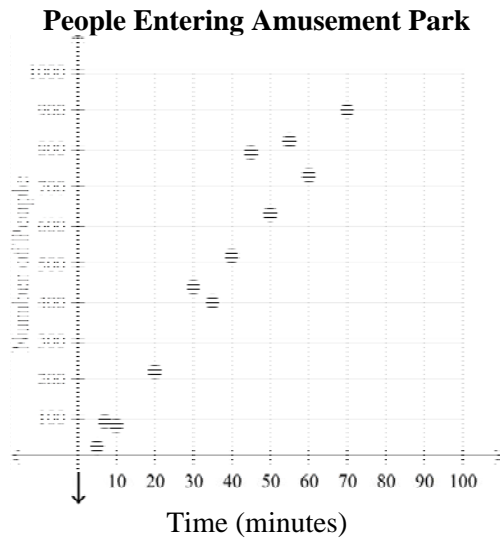
Year	Computer Production (thousands)
2002	324
2003	329
2004	334

ITEM 2



- Rate of Change: _____
- y-intercept: _____
- Production in 2015: _____
- Write a linear equation to find the company's production, P , in year, t for both items

6.



- a. Determine whether the graph shows a positive correlation, a negative correlation, or no correlation. If there is a positive or negative correlation, describe its meaning in the situation.

- b. Draw in the best fit line for this data table and determine its equation.

- c. Use the best fit equation to predict the number of people entering the park in 100 minutes.

- d. Use the best fit equation to predict the time when the number of people entering the park is 1200.

- e. Explain when this linear equation might no longer be reasonable for predicting the number of people entering the park.

Name: _____

ID: A

Essay

7. Megan wants to change her Internet Service Provider. She is considering three different plans.

Plan 1 charges a \$15 monthly fee plus \$0.08 per minute of use.

Plan 2 charges a \$5 monthly fee plus \$0.11 per minute of use.

Plan 3 charges a flat monthly fee of \$49.95.

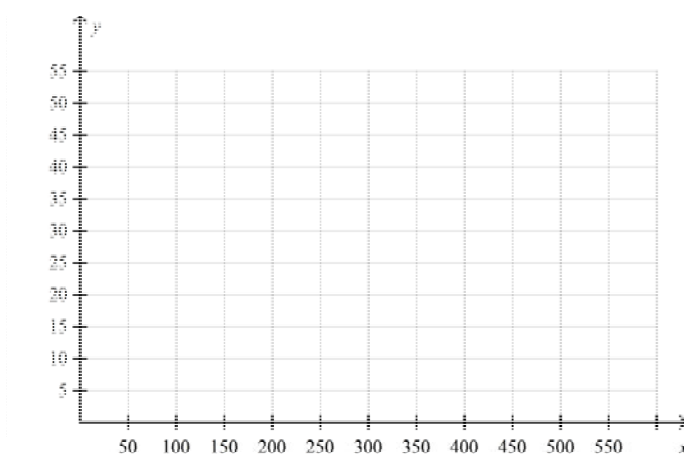
a. For each plan, write an equation that represents the monthly cost C for m minutes per month.

PLAN 1: _____

PLAN 2: _____

PLAN 3: _____

b. Graph each of the three equations on the same coordinate axes. Label each line.



c. Megan expects to use 500 minutes per month. In which plan do you think Megan should enroll? Explain how you made your choice.