Name: _____ Class: _____ Date: _____ ID: A

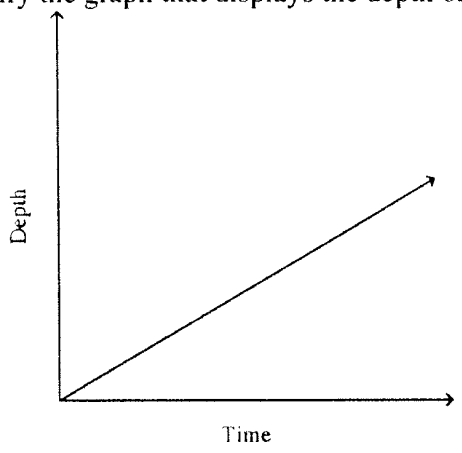
Geometry Summer Assignment

Multiple Choice

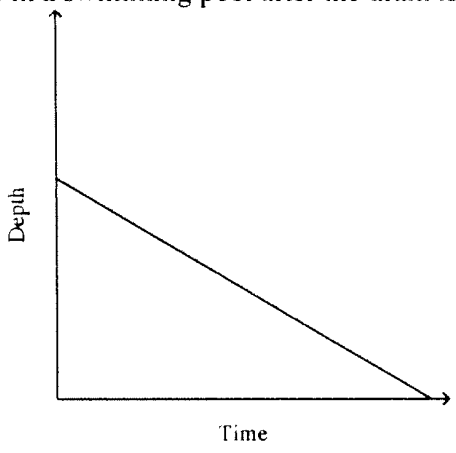
Identify the choice that best completes the statement or answers the question.

____ 1 Identify the graph that displays the depth of water in a swimming pool after the drain is opened.

A.



B.



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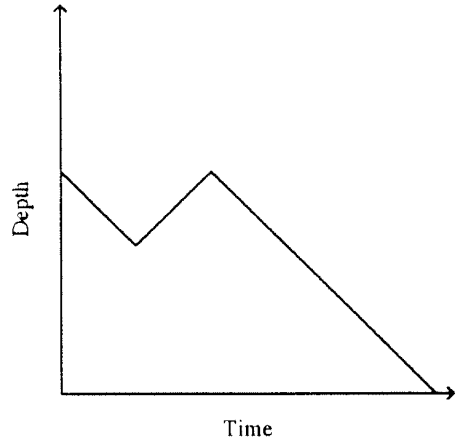

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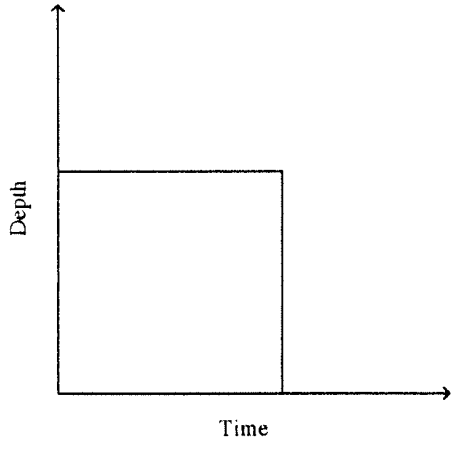

____ 2 Use cross products to determine which pair of ratios forms a proportion.

A. $\frac{3.5}{3.9} = \frac{28}{35.1}$ **B.** $\frac{3.5}{3.9} = \frac{24.5}{27.3}$ **C.** $\frac{3.5}{3.9} = \frac{28}{23.4}$ **D.** $\frac{3.5}{3.9} = \frac{21}{27.3}$

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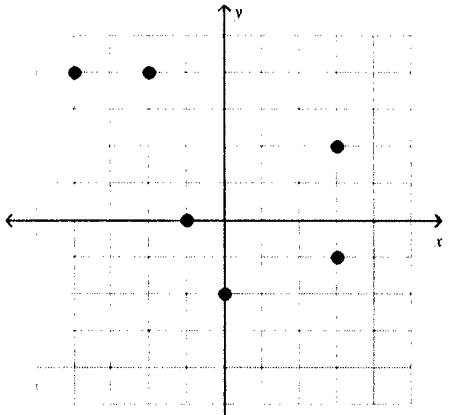
The Nut House sells peanuts for $6.75 per pound and cashews for $9.50 per pound. On Saturday, they sold 32 pounds more peanuts than cashews. The total sales for both types of nuts was $1,012.25. Let p represent the number of pounds of peanuts sold.

	Number of Pounds	Price per Pound	Total Price
Peanuts	p		
Cashews	p - 32		

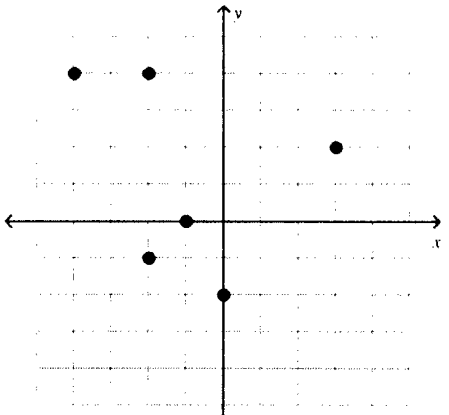
____ 3 How many pounds of peanuts were sold?
A. 49 pounds **B.** 43.6 pounds **C.** 81 pounds **D.** 82.25 pounds

____ 4 Which relation is a function?

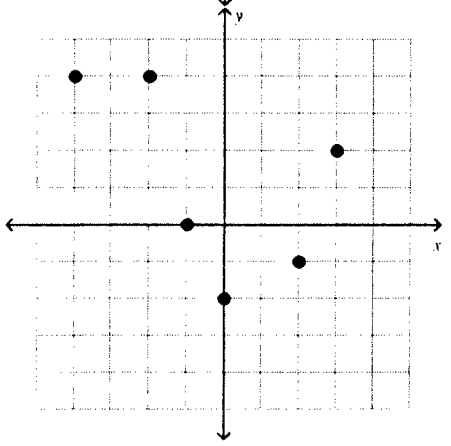
A.



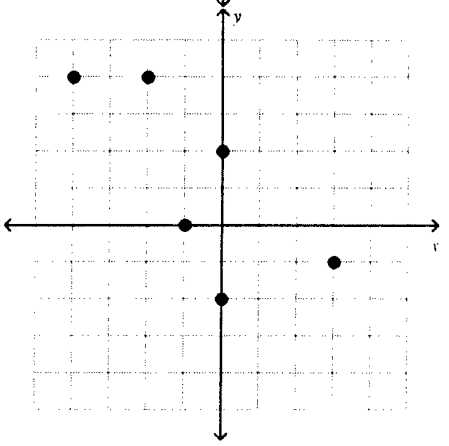
B.



C.



D.



____ 5 Which relation is a function?
A. {(5, 3), (2, 8), (–5, –1), (4, 7), (2, 1)} **B.** {(5, 3), (2, 8), (–5, –1), (4, 7), (5, 7)} **C.** {(–5, 3), (2, 8), (–5, –1), (4, 7), (2, 2)} **D.** {(5, 3), (2, 8), (–5, –1), (4, 7), (–2, 1)}

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Find the solution set for the equation, given the replacement set.

____ 6 $-x + 5y = -2$; $\{(7, 1.6), (5, 0.6), (6, 3.6), (4, -1.4)\}$
A. $\{(5, 0.6)\}$ **B.** $\{(4, -1.4)\}$ **C.** $\{(6, 3.6)\}$ **D.** $\{(7, 1.6)\}$

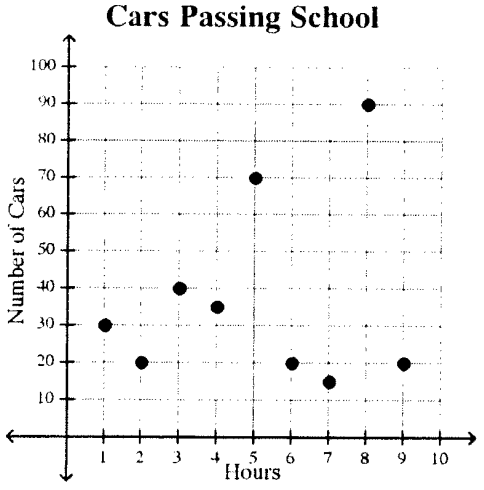
____ 7 In 1994, school lunch at Rockwell High School was \$1.20. In 1999, the cost increased to \$2.25. Find the annual rate of change in the price for school lunch from 1994 to 1999.
A. \$0.18 per year **B.** \$0.21 per year **C.** \$0.20 per year **D.** \$1.05 per year

Mr. Collins is constructing a fence around his property. He already has 25 sections up and plans to add 8 sections each Saturday until he is finished.

____ 8 Write an equation to find the total number of fence sections F standing after any number of Saturdays s.
A. $F = 25 + 8s$ **B.** $F = 8 + 25s$ **C.** $F = 25 - 8s$ **D.** $s = 25 + 8F$

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.

____ 9



A. negative; as time passes, the number of cars increases. **B.** negative; as time passes, the number of cars decreases. **C.** no correlation **D.** positive; as time passes, the number of cars decreases.

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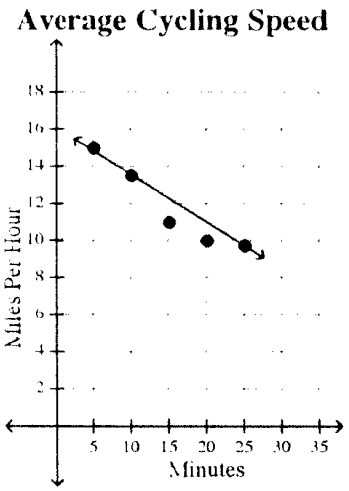

____ **10** Use the scatter plot that shows the average cycling speed as time passes. Predict the speed of the cyclist after 30 minutes.

A. about 6.2 miles per hour **B.** about 8.8 miles per hour **C.** about 12.3 miles per hour **D.** about 10.5 miles per hour

____ **11** For a certain orchid to grow, the temperature around it must be kept within 12 degrees of 78°F. Write the range of suitable temperatures.

A. $\{x \mid 66 \le x\}$ **B.** $\{x \mid x \le 90\}$ **C.** $\{x \mid x \le 66 \text{ or } x \ge 90\}$ **D.** $\{x \mid 66 \le x \le 90\}$

Short Answer

Fumiko and Kenji leave home at the same time, traveling in opposite directions. Fumiko drives 50 miles per hour, and Kenji drives 55 miles per hour.

	r	t	$d = rt$
Fumiko			
Kenji			

12 Write an equation that could be used to determine when they will be 630 miles apart.

13 In how many hours will they be 630 miles apart?

14 $f(x) = 5x + 2$, find $f(3)$.

Write a direct variation equation that relates the variables.

15 Movie tickets costs $7.50 each. The total cost of t tickets is C.

Write the point-slope form of an equation for a line that passes through the point with the given slope.

16 $(-4, 3), m = 1$

17 The cost of 3 large candles and 5 small candles is \$6.40. The cost of 4 large candles and 6 small candles is \$7.50. Which pair of equations can be used to determine, t, the cost of a large candle, and s, the cost of a small candle?

18 The admission fee of a theater is \$2.50 for adults and \$1.25 for children. On a certain day, 700 people went to the theater for a concert and \$1375 was collected. How many children and how many adults attended the concert?

Determine the best method to solve the system of equations. Then solve the system.

19 $7x - 2y = 8$

$5x + 2y = 4$

20 $x = 2y - 1$

$3x - 3y = 9$

Solve the inequality.

21 $\frac{2x - 10 + 3x}{4} < -5$

22 $-1 \geq -9n - 8 + 4n$

Find the sum or difference.

23 $\left(5a - 3a^2\right) + (8 + 7a)$

24 $\left(11p - 6q^2 - q\right) - \left(q^2 - 5p + 7p^2\right)$

Find the product.

25 $(-6t - 4v)(-7t - 4v)$

26 $(b + 7)^2$

Find the product of each sum and difference.

27 $(3l+9)(3l-9)$

Solve the trinomial equation.

28 $r^2 - 18r + 56 = 0$

29 Lisa earns \$7.15 per hour working after school. She needs at least \$235 to buy a stereo system. Write and solve an inequality to find the minimum number of hours she must work to buy the stereo.

30 David had \$350. After shopping, he was left with \$235. If c represents the amount he spent, write an equation to represent this situation. Then use the equation to find the amount of money David spent.

31 The table below shows the percentage increase in the sales of snack bars in a certain country in different years.

Year	1	2	3	4	5
Sales (%)	7.2	7.6	8	8.4	8.8

What would be the expected percentage increase in sales for the ninth year? eleventh year?

32 Kathy's car runs almost 21 miles on a gallon of gas. If Kathy needs to travel 250 miles, at least how much gas does she need to reach her destination? Express your answer to the nearest whole gallon.

33 A rectangle has an area of 480 square feet and its length and width are both whole numbers. What are the minimum and maximum values for the perimeter of the rectangle? Explain your reasoning.

Graph each set of numbers on the number line.

34 $x > -3.8$

Simplify the expression. If not possible, write simplified.

35 $3(5a+3)$

Write an algebraic expression for the verbal expression. Then simplify.

36 five times the cube of n plus the sum of n cubed and two times n

Translate the sentence into an equation.

37 Four times the number x increased by 15 is 83.

Write an equation and solve each problem.

38 Find three consecutive even integers with a sum of 48.

Solve the equation. Then check your solution.

39 $-7m + 20 = -17m - 10$

40 $6 = -2(10n + 7)$

Find the total price of the item.

41 football: \$25.98
tax: 6%

Find the final price of the item.

42 shirt: \$28
discount: 10%
tax: 6.5%

Use the Distributive Property to write each expression as an equivalent algebraic expression.

43 $-2(-4 + c)$

Simplify each expression.

44 $-3 - 9a - 4 - 5a$

45 $a + 2(-8 + a)$

Solve each equation.

46 $10z = 40$

47 $\frac{w}{6} = 10$

48 $-42 = -18 - 6c$

49 $\frac{x}{11} - 3 = -16$

Arrange the terms of the polynomial so that the powers of x are in descending order.

50 $2xy^2 + x^2y^4 - 2x^3 + y^3$

Find each sum.

51 $43 + (-18) + 50$

52 Every Friday Vicente has a 10 point quiz in his math class. His first 7 scores where 7, 9, 9, 6, 9, 8, and 8. Find his average quiz score.

Solve the equation.

53 $15z - 7 = 14z + 12$

54 $6(x + 8) = 5(x - 4)$

Express each ratio as a unit rate. Round to the nearest tenth, if necessary.

55 $175 for 5 football game tickets

Use the percent proportion to solve each problem. Round to the nearest tenth.

56 30 is 75% of what number.

57 What is 78% of 40?

Write a proportion that could be used to solve for each variable. Then solve.

58 24 buttons in 4 packages
168 buttons in m packages

The Empire State Building in New York City is 1250 feet tall. It took 30,000 workers only 1 year and 45 days to build, which is a record for a skyscraper. On a scale model of the building, the height is 25 inches.

59 What is the scale of the Empire State Building model?

Express each percent as a decimal.

60 94%

61 Evaluate the expression if $x = -1$ and $y = 19$.
$|x| - |y|$

Express each decimal as a percent.

62 0.028

Solve each proportion.

63 $\frac{8}{3} = \frac{d}{21}$

64 $\frac{12}{b} = \frac{6}{9}$

Solve each problem by writing and solving an equation.

65 For his son's birthday party, Mr. Mori bought four equally-priced pizzas and a $3 bag of potato chips. If he spent $39, find the cost of each pizza.