1. Solve for the variable:

$-2(a-3)=16$ -2a-3=16

Enter the answer only with no spaces between signs and numbers; do not enter the letter of the variable. Examples of correct responses:

6   1/2   0.342   -11   -3/5

Enter your answer in "variable=answer" format with no spaces. Write fractions using "/". For example:

x=5   y=-3   z=5/7

2.   A television commercial advertises that a certain type of light bulb will last, on the average, 200 hours longer than three times the life of another type of bulb. If consumer tests show that the advertised bulb lasts 4700 hours, how many hours must the other type of bulb last for the advertiser's claim to be valid?

Give answer as number only; do not include units of measure

3.   Find the correct solution set that satisfies the inequality

$5x+2 \geq 7(x+2)$

Question 3 options:

⦿   a. $x \geq 6$

○   b. $x \geq -6$

○   c. $x \leq -6$

○   d. $x \leq 6$

4.   Using the given information, write the equation of the lines in _slope-intercept_ form:

A. Slope $= - 11$, y - intercept $= - 4$

B. $m = 3$, line passes through (4 , 1)

Enter equations without spaces between alphanumeric characters and signs.   Examples of correctly-entered responses are:

a. y=3x+5

b. y=-5x-22

c. 3x-5y=13

d. 2x+7y=-23

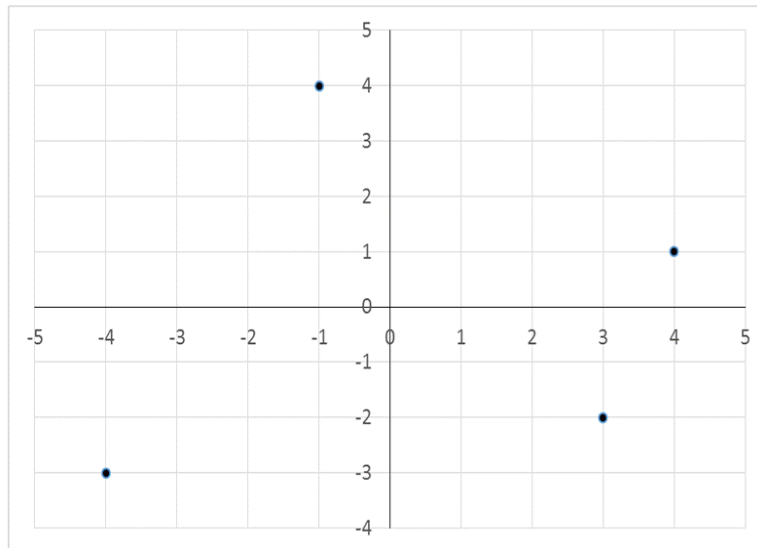*5. Find the equation in general (standard) form of the line passing through (0 , −5) and (6 , −1)*

a. y= 2/3x − 5

b. 2x − 3y = 15

c. −2/3x + y=−5

d. x + y=−5

6.

○   a. (4,3) ; (−3,2) ; (1,−4) ; (−4,−1)

○   b. (−4,−3) ; (3,−2) ; (−1,4) ; (4,1)

     c. (−4,3) ; (−3,−2) ; (1,4) ; (−4,1)
○

     d. (−3,−4) ; (−2,3) ; (1,4) ; (4,−1)
○

7. *Using the accompanying graph, determine the equation of the line*

a. y=1/2x -1

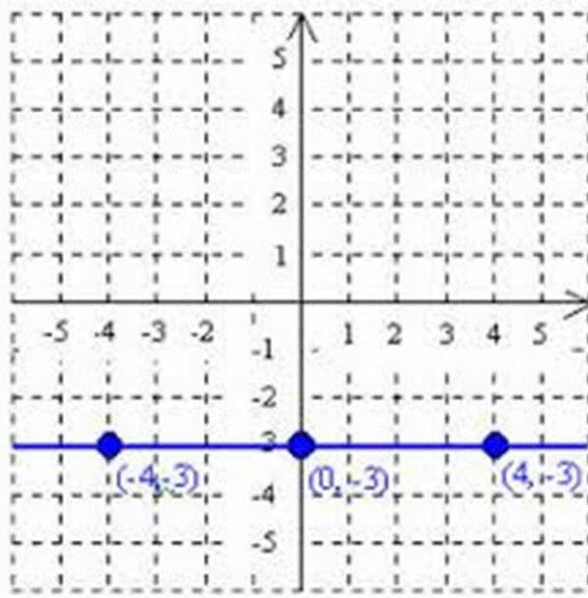b. y=-2x + 1

c. y= 2x + 1

d. y=1/2x + 1

8. *Using the accompanying graph, determine the equation of the line*

a.

The graph shows a horizontal blue line passing through the points (-4,-3), (0,-3), and (4,-3).

a. x=−3

b. y=−3x−3

c. y= -3

d. y=x-3

9. A town's population has been increasing at a constant (linear) rate. In 2010 the population was 46,020. By 2012 the population had increased to 52,070. Assume this trend continues.

a. The town's predicted population in the year 2020 is:

b. In what year will the town's predicted population be 103495?

10. A phone company has a monthly cellular data plan where a customer pays a flat monthly fee of $10 and then a certain amount of money per megabyte (MB) of data used on the phone. If a customer uses 20 MB, the monthly cost will be $11.20. If the customer uses 130 MB, the monthly cost will be $17.80.

a. Find a linear equation for the monthly cost of the data plan C as a function of x, the number of MB used.

Enter equation without any spaces between alphanumeric characters and signs. Enter any decimal values less than 1 with a "0" before the decimal point. Examples of correctly-entered response are

C=2x+5   C=0.03x–22   C=–4x+0.35

b. Use your equation to find the total monthly cost (in $) if 250MB are used. Enter number value only (no "$" sign) with answer rounded to nearest cent (2 places after decimal)

11. In 2003, the owl population P in a park was measured to be 340. By 2007, the population was measured again to be 285. The population changes linearly. Let the input t be years since 2003.

a. Find a formula for the owl population, P. Let the input be years t since 2003.

Enter equation without any spaces between alphanumeric characters and signs. Exact values required; do not round off any number values. Enter any decimal values less than 1 with a "0" before the decimal point, and round decimal answers to nearest hundredth (two places after decimal)   Examples of correctly-entered responses are
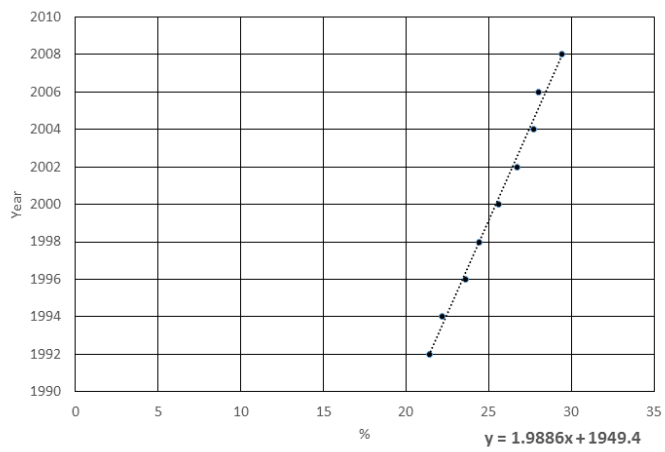
P=2t+5   P=0.03t–22   P=–4t+0.34

What does your model predict the park's owl population to be in 2019? Give answer rounded to nearest whole number ("whole owl"

12.   The U.S. Census tracks the percentage of persons 25 years or older who are college graduates. That data for several years is given below.
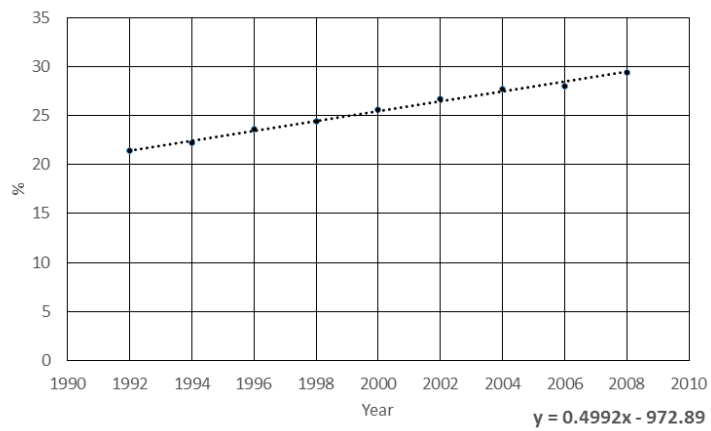
Year	1992	94	96	98	2000	02	04	06	2008
% College Graduates	21.4	22.2	23.6	24.4	25.6	26.7	27.7	28.0	29.4

Which scatterplot and linear regression ("line-of-best-fit") equation correctly represents the linear model formed from this data?
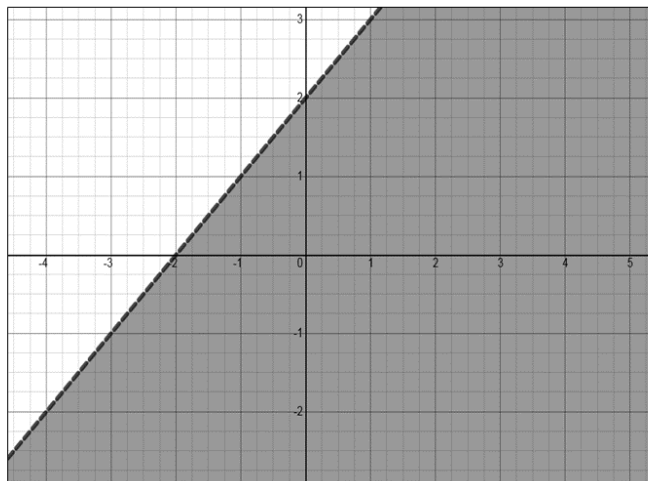
a.

y = 1.9886x + 1949.4

b.

y = 0.4992x - 972.89

13. The graph below depicts which of the following inequalities?

a.

a. y>x+2

b. y≥x+2

c. y<x+2

d. y≤x+2

14. The accompanying graph depicts which of the following inequalities?

Question 14 options:

- ○ *2x+3y<6*
- ○ *2x+3y>6*
- ○ *2x+3y≤6*
- ○ *2x+3y≥6*