

Solve the equation.

6) $(y - 9) - (y + 6) = 8y$

A) $-\frac{15}{8}$

B) $-\frac{5}{3}$

C) $-\frac{15}{7}$

D) $-\frac{1}{4}$

Solve the formula for the specified variable.

7) $A = P(1 + nr)$ for r

A) $r = \frac{P - A}{Pn}$

B) $r = \frac{Pn}{A - P}$

C) $r = \frac{A}{n}$

D) $r = \frac{A - P}{Pn}$

Solve the equation.

8) $\frac{-6x + 5}{5} + \frac{4}{5} = -\frac{3x}{7}$

A) $\frac{21}{19}$

B) $\frac{7}{27}$

C) $\frac{7}{3}$

D) $-\frac{7}{27}$

Solve the problem.

9) Mark has \$105 to spend on salmon at \$5.00 per pound and/or chicken at \$3.00 per pound. If he buys s pounds of salmon and c pounds of chicken, the equation $5s + 3c = 105$ must be satisfied. How much salmon did Mark buy if he bought 20 pounds of chicken?

A) 9 pounds

B) 16 pounds

C) 2 pounds

D) 13 pounds

Solve the equation.

10) $-3.7q + 1.2 = -2.4 - 1.9q$

A) -5

B) 2

C) 1.5

D) 1.0

11) $2(2z - 4) = 3(z + 4)$

A) 4

B) 20

C) 6

D) -4

Solve the problem.

12) A study was conducted to compare the average time spent in the lab each week versus course grade for computer students. The results are recorded in the table below. By using linear regression, the following function is obtained: $y = 88.6 - 1.86x$ where x is the number of hours spent in the lab and y is grade on the test. Use this function to predict the grade of a student who spends 7 hours in the lab.

<u>Number of hours spent in lab</u>	<u>Grade (percent)</u>
10	96
11	51
16	62
9	58
7	89
15	81
16	46
10	51

A) 77.0

B) 71.6

C) 75.6

D) 88.6

Use the table to determine whether the data set represented is exactly linear, approximately linear, or nonlinear.

13)

Foot Length (cm)	25	26	28	29	30	31	32	33	37
Forearm Length (cm)	24	25	28	30	31	30	31	33	37

A) Exactly linear

B) Nonlinear

C) Approximately linear

Solve the problem.

- 14) The paired data below consist of the temperatures on randomly chosen days and the amount a certain kind of plant grew (in millimeters). By using linear regression, the following function is obtained: $y = 14.6 + 0.211x$ where x is temperature and y is growth in millimeters. Use this function to predict the growth of a plant if the temperature is 60.

Temp	62	76	50	51	71	46	51	44	79
Growth	36	39	50	13	33	33	17	6	16

A) 27.74 mm

B) 26.00 mm

C) 27.26 mm

D) 28.22 mm

Provide an appropriate response.

- 15) A pediatric speech therapist started her own practice in 1990. The function $y = 3.2x + 10.53$ models the number of patients she treated each year, where x is the number of years after 1990. The model was found using data for the years between 1990 and 1998. What does the model estimate as the number of patients in 2000? Round to the nearest whole number. Is this interpolation or extrapolation?

A) 43; interpolation

B) 44; interpolation

C) 43; extrapolation

D) 45; extrapolation

- 16) A pediatric speech therapist started her own practice in 1990. The function $y = 3.2x + 10.53$ models the number of patients she treated each year, where x is the number of years after 1990. The model was found using data for the years between 1990 and 1998. What does the model estimate as the number of patients in 1995? Round to the nearest whole number. Is this interpolation or extrapolation?

A) 25; extrapolation

B) 29; interpolation

C) 27; extrapolation

D) 27; interpolation

Write the best-fit linear model for the data.

- 17) A pediatric speech therapist started her own practice in 1990. The table below shows the number of children she treated each year from 1990 to 1998. Align the data to the number of years past 1990 and fit a linear model to the data.

Year	1990	1991	1992	1993	1994	1995	1996	1997	1998
Number of Patients	11	15	16	20	23	25	29	34	37

A) $y = 3.2x + 10.53$

B) $y = 11x + 2$

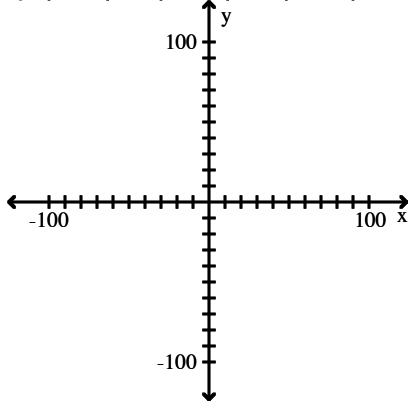
C) $y = 10.53x + 3.2$

D) $y = 2x + 11$

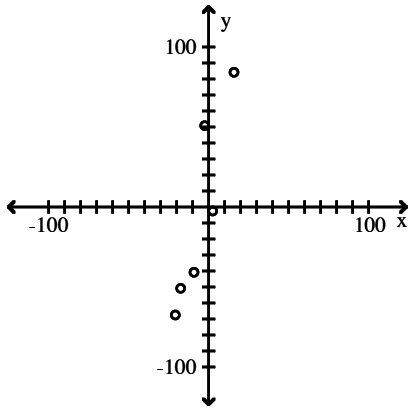
Construct a scatter plot of the data in the table.

18)

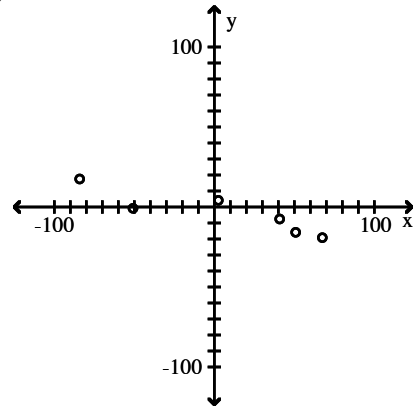
x	16	-9	-20	-1	-16	3
y	-84	41	68	-50	52	4



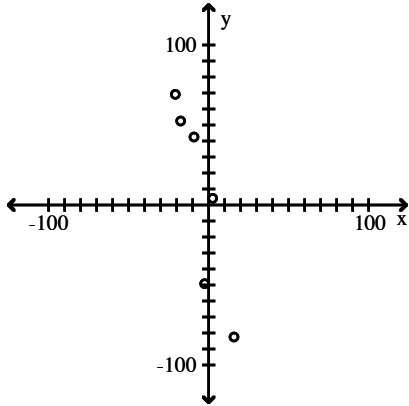
A)



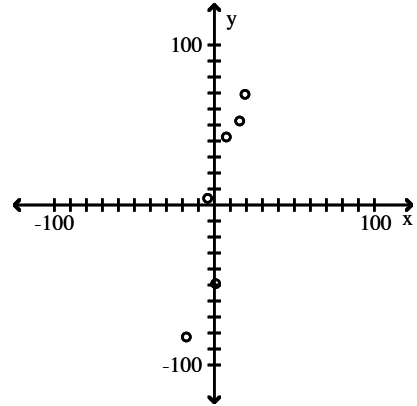
B)



C)

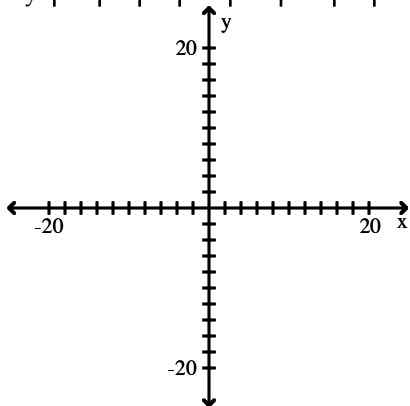


D)

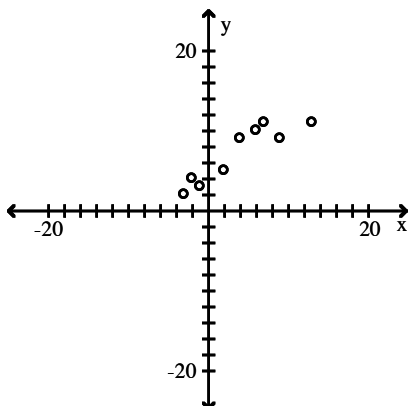


19)

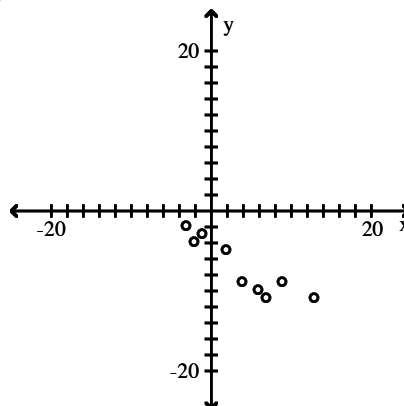
x	-3	4	9	7	13	6	2	-2	-1
y	2	9	9	11	11	10	5	4	3



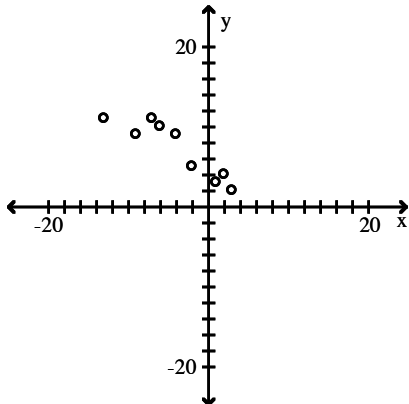
A)



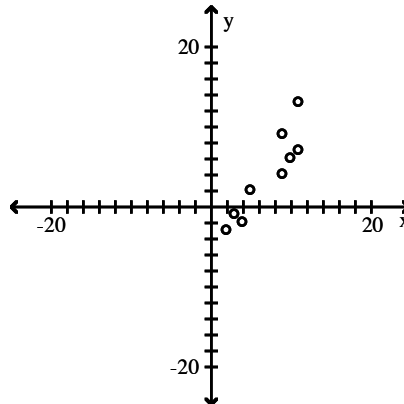
B)



C)



D)



Write the best-fit linear model for the data.

20) Managers rate employees according to job performance and attitude. The results for several randomly selected employees are given below.

Performance	59	63	65	69	58	77	76	69	70	64
Attitude	72	67	78	82	75	87	92	83	87	78

A) $y = 2.81 + 1.35x$

B) $y = 92.3 - 0.669x$

C) $y = 11.7 + 1.02x$

D) $y = -47.3 + 2.02x$