

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

Given the linear correlation coefficient  $r$  and the sample size  $n$ , determine the critical values of  $r$  and use your finding to state whether or not the given  $r$  represents a significant linear correlation. Use a significance level of 0.05.

1)  $r = 0.981, n = 25$

1) \_\_\_\_\_

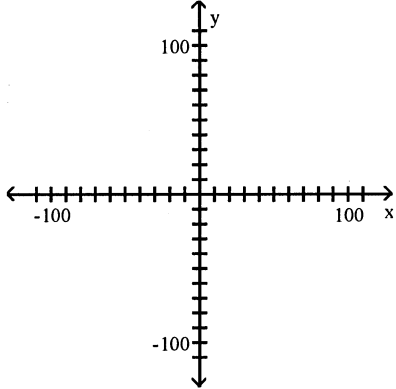
- A) Critical values:  $r = \pm 0.487$ , significant linear correlation
- B) Critical values:  $r = \pm 0.396$ , significant linear correlation
- C) Critical values:  $r = \pm 0.396$ , no significant linear correlation
- D) Critical values:  $r = \pm 0.487$ , no significant linear correlation

Construct a scatter diagram for the given data.

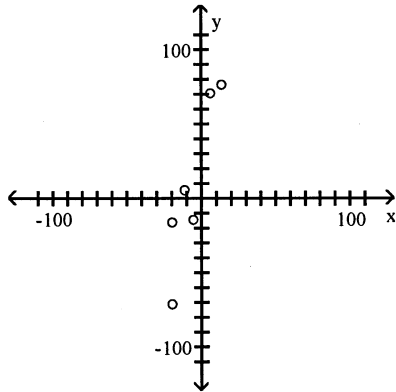
2) 

$x$	14	-11	-19	7	-19	-5
$y$	-76	-5	17	-70	72	15

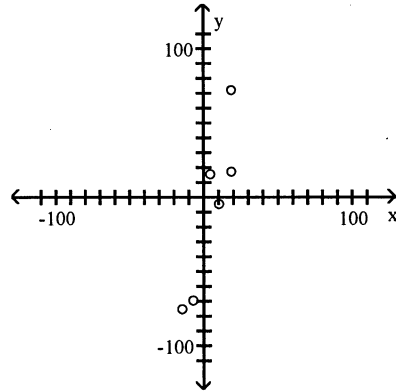
2) \_\_\_\_\_



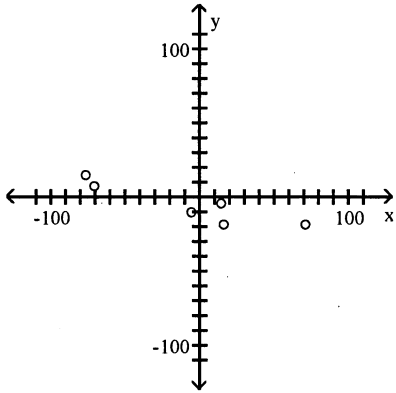
A)



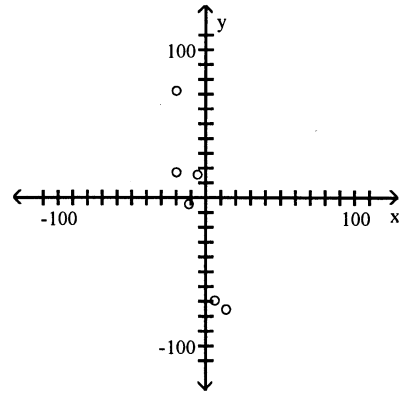
B)



C)



D)

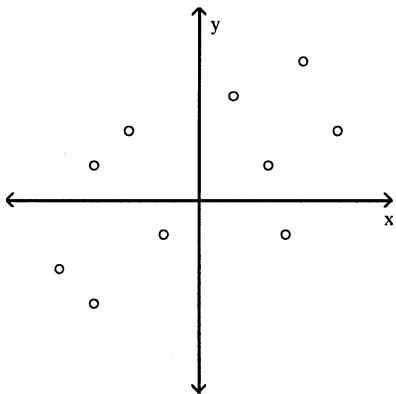


Determine which plot shows the strongest linear correlation.

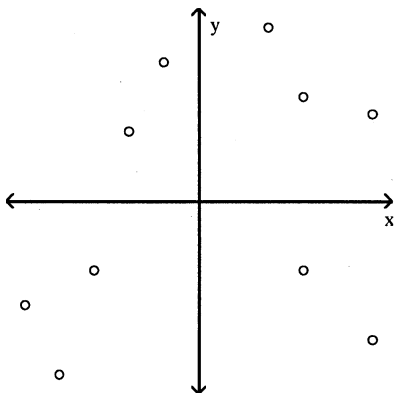
3)

3) \_\_\_\_\_

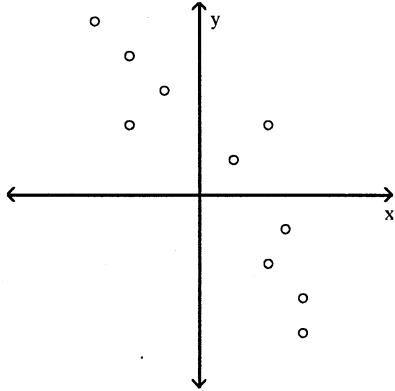
A)



B)



C)



Find the value of the linear correlation coefficient  $r$ .

4) 

$x$	57	53	59	61	53	56	60
$y$	156	164	163	177	159	175	151

4) \_\_\_\_\_

A) 0.109

B) -0.078

C) 0.214

D) -0.054

Find the best predicted value of  $y$  corresponding to the given value of  $x$ .

5) Six pairs of data yield  $r = 0.444$  and the regression equation  $\hat{y} = 5x + 2$ . Also,  $\bar{y} = 18.3$ . What is the best predicted value of  $y$  for  $x = 5$ ?

5) \_\_\_\_\_

A) 18.3

B) 27

C) 93.5

D) 4.22

Use the given data to find the equation of the regression line. Round the final values to three significant digits, if necessary.

6) 

$x$	0	3	4	5	12
$y$	8	2	6	9	12

6) \_\_\_\_\_

A)  $\hat{y} = 4.88 + 0.625x$

B)  $\hat{y} = 4.98 + 0.725x$

C)  $\hat{y} = 4.98 + 0.425x$

D)  $\hat{y} = 4.88 + 0.525x$