

EXAMPLES 3 and 4

on pp. 115–116
for Exs. 10–15

BEST-FITTING LINES In Exercises 10–15, (a) draw a scatter plot of the data, (b) approximate the best-fitting line, and (c) estimate y when $x = 20$.

10.

x	1	2	3	4	5
y	10	22	35	49	62

12.

x	12	25	36	50	64
y	100	75	52	26	9

14.

x	5.6	6.2	7	7.3	8.4
y	120	130	141	156	167

11.

x	1	2	3	4	5
y	120	101	87	57	42

13.

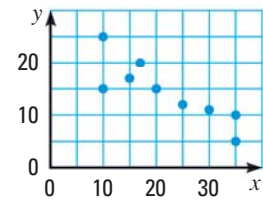
x	3	7	10	15	18
y	16	45	82	102	116

15.

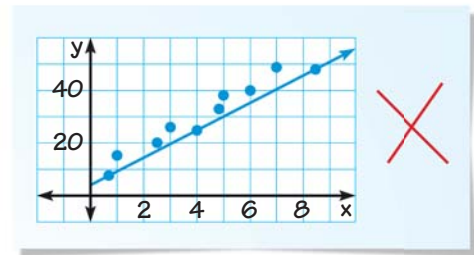
x	16	24	39	55	68
y	3.9	3.7	3.4	2.9	2.6

16. **TAKS REASONING** Which equation best models the data in the scatter plot?

- (A) $y = 15$ (B) $y = -\frac{1}{2}x + 26$
(C) $y = -\frac{2}{5}x + 19$ (D) $y = -\frac{4}{5}x + 33$



17. **ERROR ANALYSIS** The graph shows one student's approximation of the best-fitting line for the data in the scatter plot. Describe and correct the error in the student's work.



18. **TAKS REASONING** A set of data has correlation coefficient r . For which value of r would the data points lie closest to a line?

- (A) $r = -0.96$ (B) $r = 0$ (C) $r = 0.38$ (D) $r = 0.5$

EXAMPLE 5

on p. 116
for Exs. 19–20

GRAPHING CALCULATOR In Exercises 19 and 20, use a graphing calculator to find and graph an equation of the best-fitting line.

19.

x	78	74	68	76	80	84	50	76	55	93
y	5.1	5.0	4.6	4.9	5.3	5.5	3.7	5.0	3.9	5.8

20.

x	7000	7400	7800	8100	8500	8800	9200	9500	9800
y	56.0	54.5	51.9	50.0	47.3	45.6	43.1	41.6	39.9

21. **TAKS REASONING** Give two real-life quantities that have (a) a positive correlation, (b) a negative correlation, and (c) approximately no correlation.

22. **REASONING** A set of data pairs has correlation coefficient $r = 0.1$. Is it logical to use the best-fitting line to make predictions from the data? Explain.

23. **CHALLENGE** If x and y have a positive correlation and y and z have a negative correlation, what can you say about the correlation between x and z ? Explain.