Week 1 Thursday Course 3 Warm-up

Which of the following has the same value as $7^{7} \cdot 7^{-4}$?

A) 49^{-3}

B) 7^{-3}

C) 7^{3}

D) 49^{3}

Which is equal to the following?

$\sqrt[3]{125}$

A) 5

B) 25

C) 41

D) 50

Calculate.

$$\frac{(2 \times 10^{5})(6 \times 10^{6})}{3 \times 10^{4}}$$

A) 4×10^{7}

B) 4×10^{8}

C) 4×10^{15}

D) 4×10^{16}

If the relationship below were graphed, what would be the slope of the graph?

x	y
9	6
18	12
27	18
36	24

A) $\frac{1}{3}$

B) $\frac{1}{2}$

C) $\frac{2}{3}$

D) $\frac{3}{2}$

Lesson 10.1 Scatter Plots Day 2

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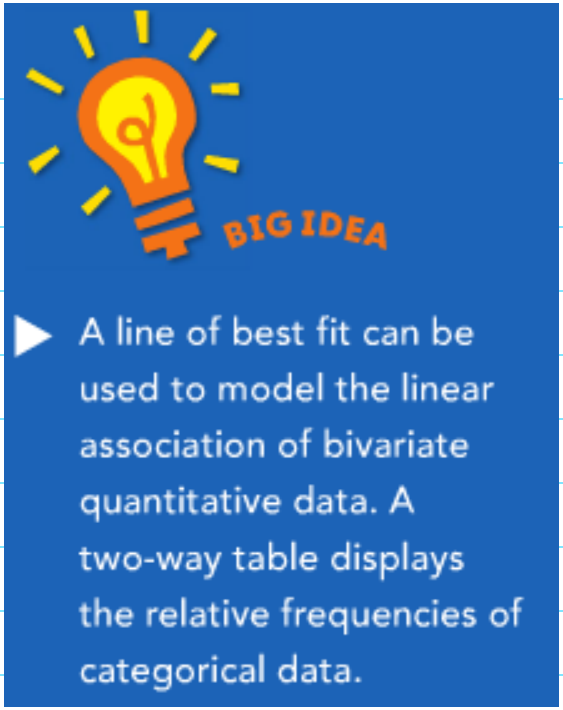
Lesson 10.1 Scatter Plots Day 2

Objective

TSW

- Construct a scatter plot given two sets of quantitative data.
- Identify patterns of association between two sets of quantitative data.
- Identify outliers in a scatter plot.



Common Core State Standards

8.SP.1 Construct and interpret scatter plots for bivariate measurement data to investigate patterns of association between two variables.

Mathematical Practices 1. Solve problems/persevere. 2. Reason. 4. Model mathematics.

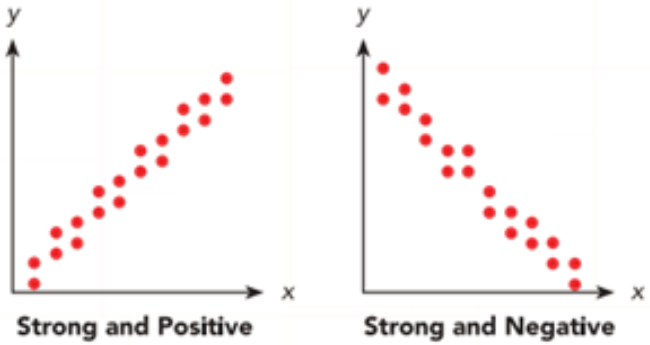
Lesson 10.1 Scatter Plots Day 2

TSW
- Construct a scatter plot given two sets of quantitative data.
- Identify patterns of association between two sets of quantitative data.
- Identify outliers in a scatter plot

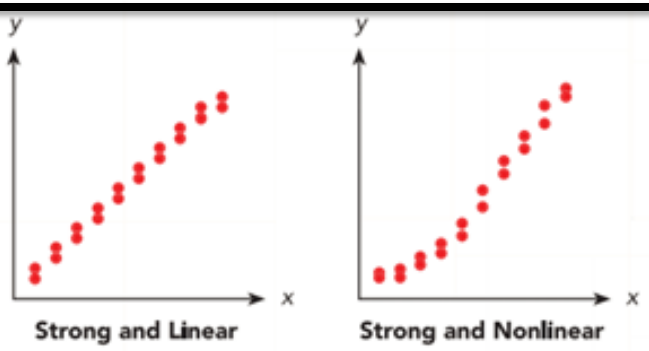
Vocabulary-Bivariate data with strong, weak or no Association

Strong Association- If variables have a strong enough association, you can probably determine whether the pattern is positive or negative, or linear or nonlinear

a) Bivariate data with positive or negative association

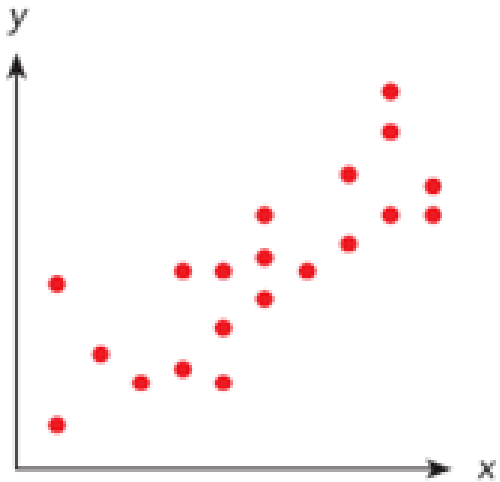


b) Bivariate data with a linear or nonlinear association



Lesson 10.1 Scatter Plots Day 2

Weak Association- If the two variables have a weak association, it is harder to tell whether there is any pattern between them.

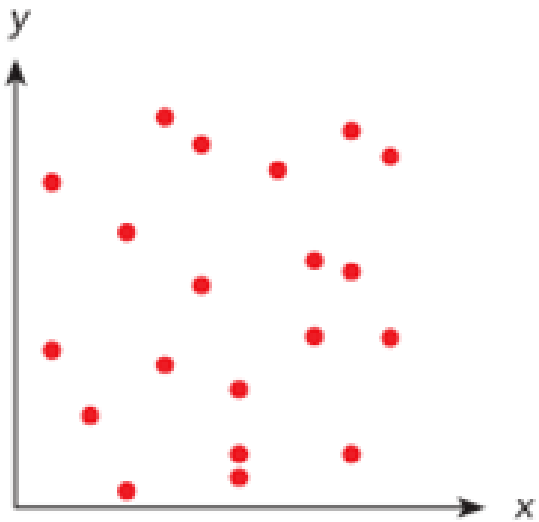


Weak Association

The data points cluster loosely in a pattern that is less predictable.

Lesson 10.1 Scatter Plots Day 2

No Association- If the two variables have no association, you can conclude that the bivariate data do not vary in a pattern with each other.



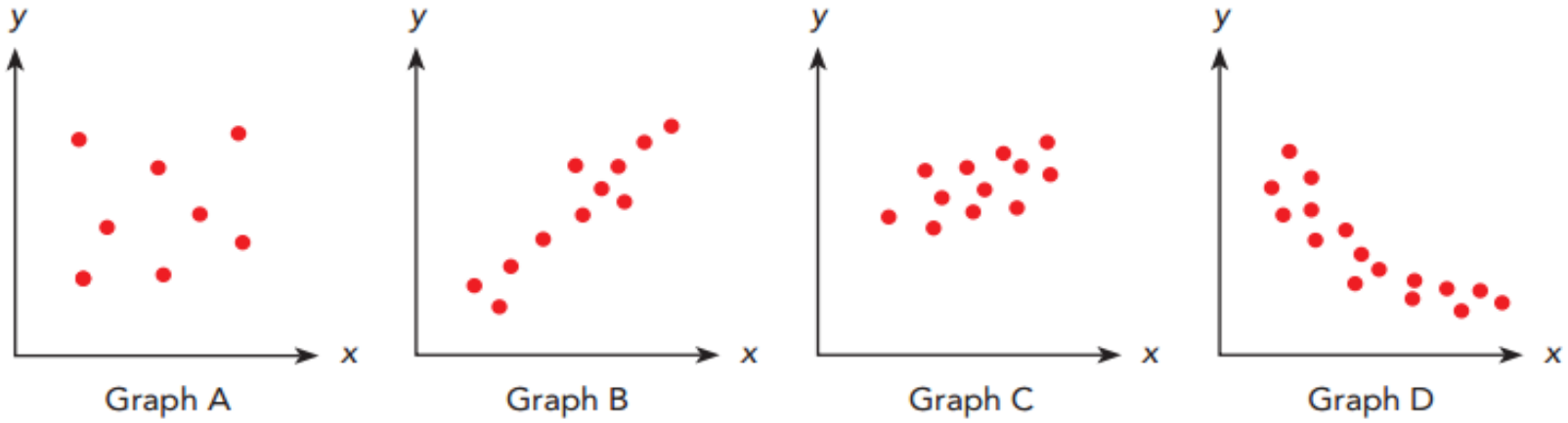
No Association

The data points show no apparent trend at all. A pattern cannot be found.

Example 2 Identify the association shown in the bivariate data.

Describe the association in the bivariate data shown in each scatter plot.

Solution



Graph A:
Graph B:
Graph C:
Graph D:

You can use these categories to describe the association between the two variables:

- Strong, weak, or no association
- Positive or negative association
- Linear or nonlinear association

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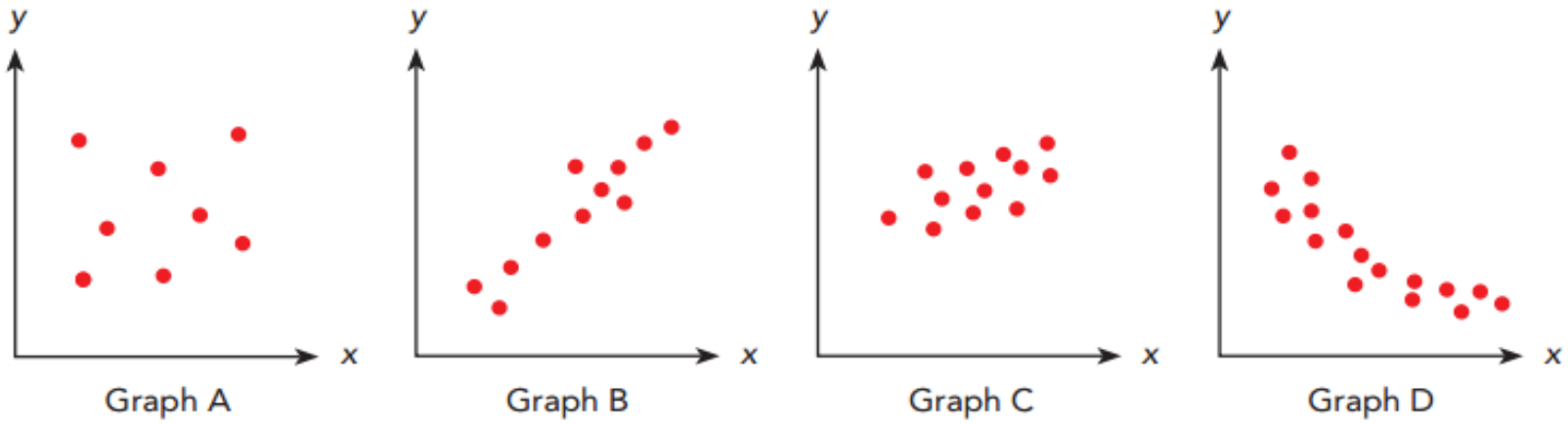


Graph A: No association
Graph B: Strong, positive, and linear association
Graph C: Weak association
Graph D: Strong, negative, and nonlinear association

You can use these categories to describe the association between the two variables:

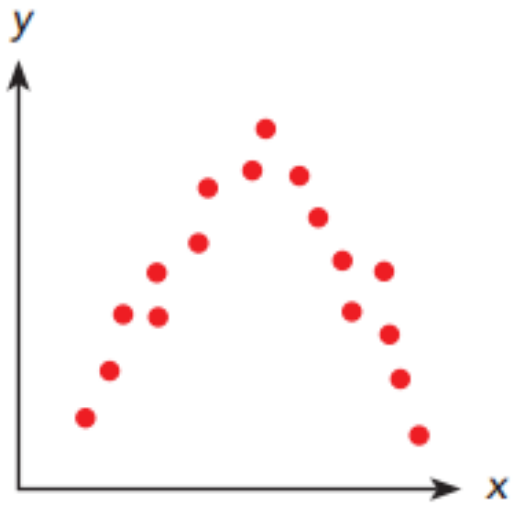
- Strong, weak, or no association
- Positive or negative association
- Linear or nonlinear association

Lesson 10.1 Scatter Plots Day 2

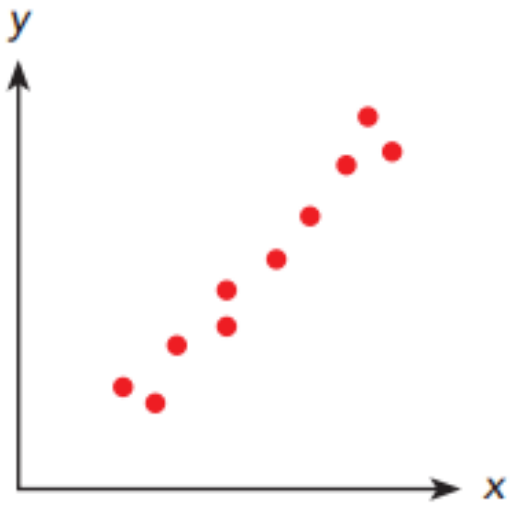
Guided Practice

Complete.

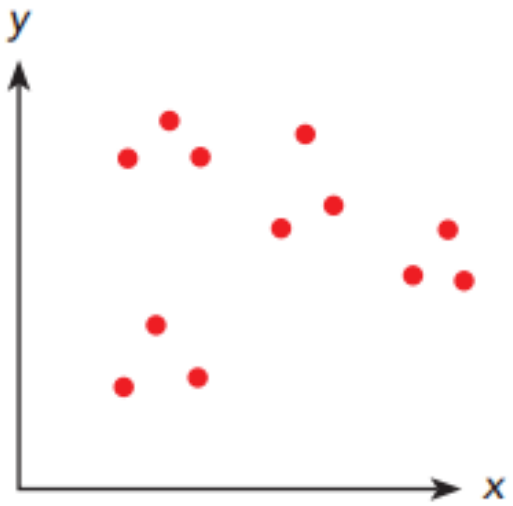
2 Describe the association in the bivariate data shown in each scatter plot.



Graph E



Graph F



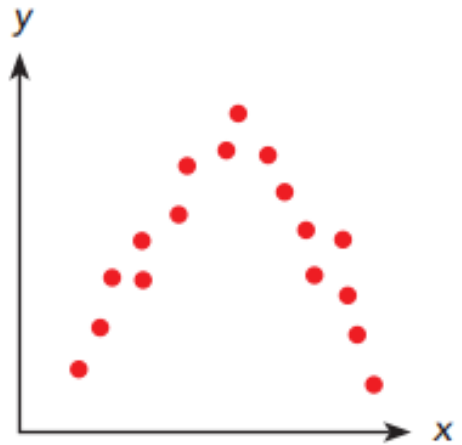
Graph G

Lesson 10.1 Scatter Plots Day 2

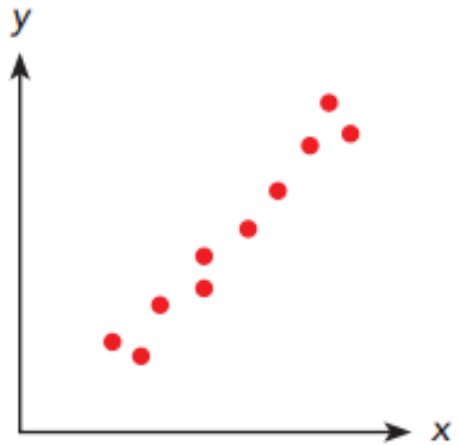
Guided Practice

Complete.

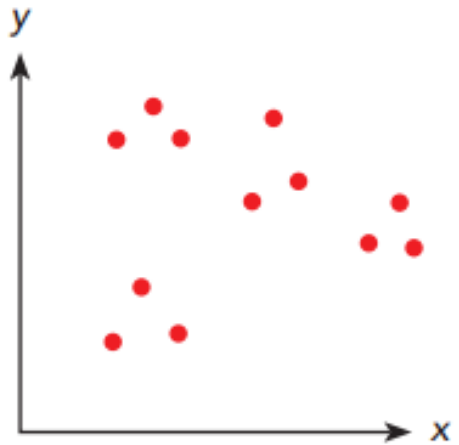
2 Describe the association in the bivariate data shown in each scatter plot.



Graph E



Graph F



Graph G

Graph E: ? and ? association Strong; nonlinear

Graph F: ?, ?, and ? association Strong; positive; linear

Graph G: ? association No

Lesson 10.1 Scatter Plots Day 2

Practice 10.1 #4-7

Name:_____ Date:_____

Practice 10.1

Draw a scatter plot for each table of bivariate data.

1. Use 1 centimeter on the horizontal axis to represent 10 units. Use 1 centimeter on the vertical axis to represent 20 units.

x	10	20	30	70	50	40	50
y	36	60	100	212	156	124	144

x	30	20	30	10	60	60	70
y	96	64	92	40	184	180	216

2. Use 1 centimeter on the horizontal axis to represent 5,000 people. Use 2 centimeters on the vertical axis to represent 5,000 cars.

Population (x in 1,000s)	10	20	20	35	30	10	40
Cars (y in 1,000s)	1	2	3	15	9	2	32

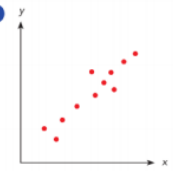
Population (x in 1,000s)	25	15	15	25	40	35	20
Cars (y in 1,000s)	4	1	2	5	30	16	5

3. Use 1 centimeter on the horizontal axis to represent 1 hour. Use 1 centimeter on the vertical axis to represent a score of 10.

Study Time (x hours)	2	3	5	6	7	4	9
Test Score (y)	22	32	48	62	76	40	90

Study Time (x hours)	8	5	6	4	7	9	3
Test Score (y)	84	52	60	42	72	86	36

Describe the association shown in the bivariate data for each scatter plot.

4. 

5. 

Course 3

Challenge-

* #13 & 17 provide challenge
*Pick a Problem
*BuzzMath

Lesson Check #4 & 6-can describe the association shown in bivariate data

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Lesson 10.1 Scatter Plots Day 2

Ticket Out the Door- Connect, Extend, Challenge

1. How are the ideas and information presented CONNECTED to what you already knew?

2. What new ideas did you get that EXTENDED or pushed your thinking in new directions?

3. What is still CHALLENGING or confusing for you to get your mind around? What questions, wonderings or puzzles do you now have?