Name: ______________________ Date: ______________

CHAPTER 11 Graphs and Probability

Worksheet 1 Making and Interpreting Double Bar Graphs

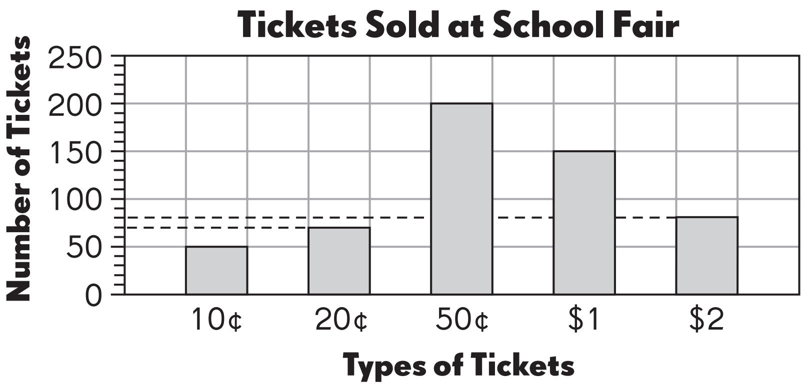
Use the data in the table to draw a bar graph and answer the questions.

Example

The table shows the types of tickets sold at a school fair.

	10¢	20¢	50¢	$1	$2
Total number of tickets	50	70	200	150	80

Draw a bar graph to show the different types of tickets sold.



Which ticket is the most popular? 50¢

Which ticket is the least popular? 10¢

How many more $1 tickets than $2 tickets were sold? 70

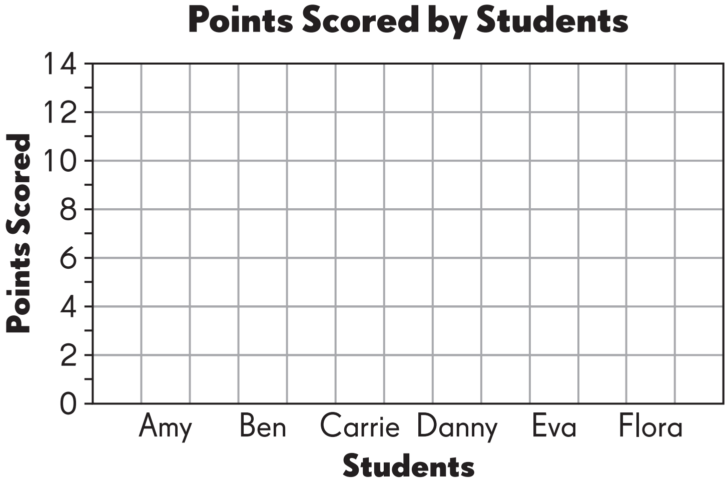
How many tickets were sold in all? 550

Name: ____________________ **Date:** ____________

The table shows the number of points scored by students Amy, Ben, Carrie, Danny, Eva, and Flora.

	Amy	Ben	Carrie	Danny	Eva	Flora
Score	7	9	12	6	3	1

Draw a bar graph to show the points scored by each student.



1. Who scores the most points? ____________

2. Who scores the fewest points? ____________

3. How many more points than Flora does Danny score? ____________

4. Who scores three times as many points as Eva? ____________

5. How many more points must Amy score so that she gets as many points as Carrie? ____________

6. How many more points must Eva score so that she gets one point fewer than Ben? ____________

Name: ______________________ Date: ______________

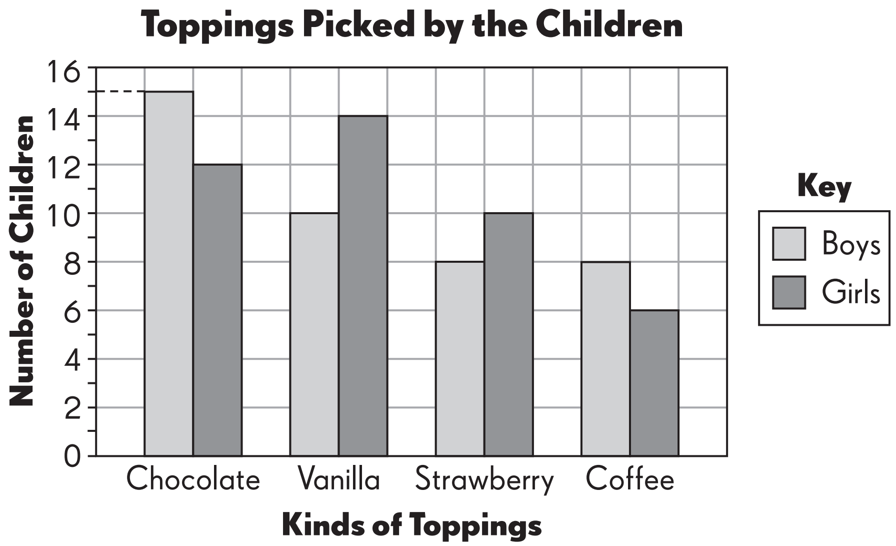
Use the data in the table to draw a double bar graph and answer the questions.

Example

The table shows the different kinds of toppings that children picked for their ice cream at Jazz Cafe.

	Chocolate		Vanilla		Strawberry		Coffee	
	Boys	**Girls**	**Boys**	**Girls**	**Boys**	**Girls**	**Boys**	**Girls**
Number	15	12	10	14	8	10	8	6

Draw a **double bar graph** to show the different kinds of toppings picked by the boys and girls for their ice cream.



Which topping is the children's favorite? Chocolate

Which topping is the least popular? Coffee

How many more children chose the chocolate topping than the coffee topping? 13

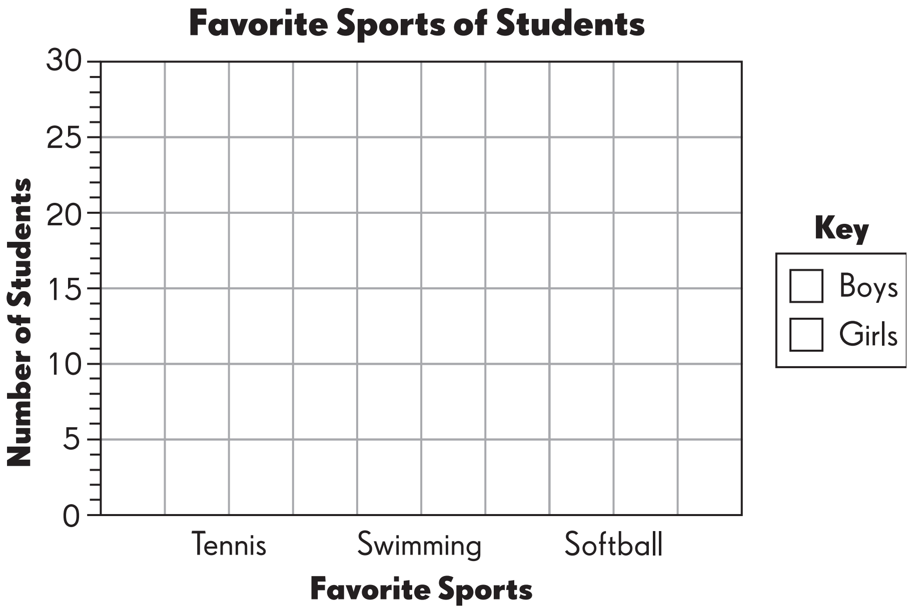
How many children chose the strawberry topping? 18

Name: ______________________ Date: ______________

The table shows the favorite sports of all the students in a school.

	Tennis		Swimming		Softball	
	Boys	**Girls**	**Boys**	**Girls**	**Boys**	**Girls**
Number	18	12	24	22	16	8

Draw a double bar graph to show the favorite sports of the boys and girls in the school.



7. How many boys like tennis? ____________

8. Do more students prefer softball or swimming? ____________

How many more? ____________

9. Which is the most popular sport? ____________

10. Which is the least popular sport? ____________

Name: ______________________ Date: ______________

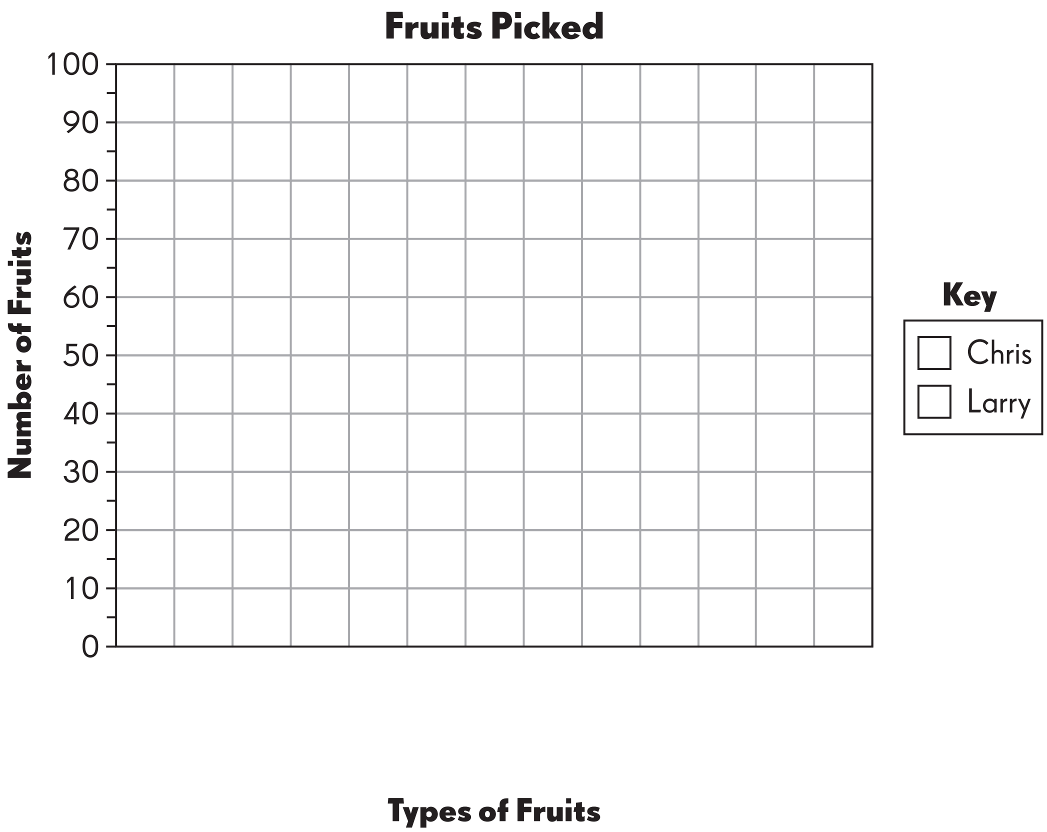
11. How many girls are there in the school? __________

12. How many boys are there in the school? __________

The table shows the number of fruits picked by Chris and Larry at a farm.

	Apples		Oranges		Pears	
	Chris	Larry	Chris	Larry	Chris	Larry
Number	80	100	75	45	90	60

Draw a double bar graph.



13. How many fruits did Chris pick? __________

Name: ______________________ Date: ______________

14. Who picked more fruits, Chris or Larry? __________

How many more? __________

15. Which type of fruit do Chris and Larry have the greatest number of? Chris: __________; Larry: __________

16. Which type of fruit do they have the least number of? __________

17. How many more oranges must Chris pick so that he has twice as many oranges as Larry? __________

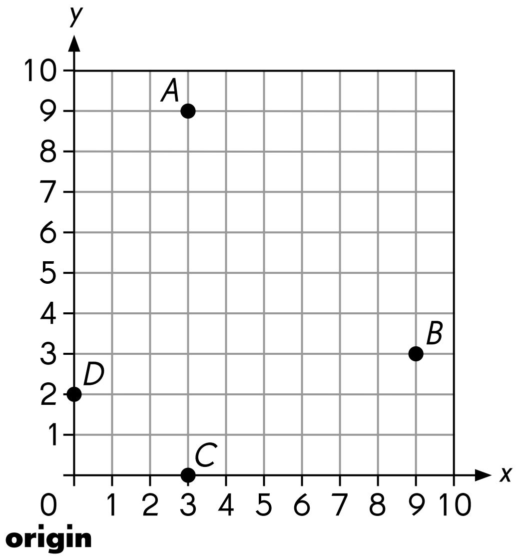
18. How many more apples must Larry pick so that Chris has half as many apples as Larry? __________

Name: ______________________ Date: ______________

Worksheet 2 Graphing an Equation

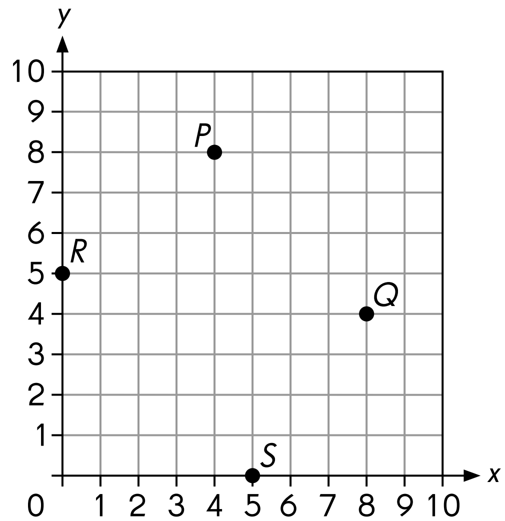
Write the ordered pair for each point.

Example



A (3 , 9) B (9 , 3)

C (3 , 0) D (0 , 2)



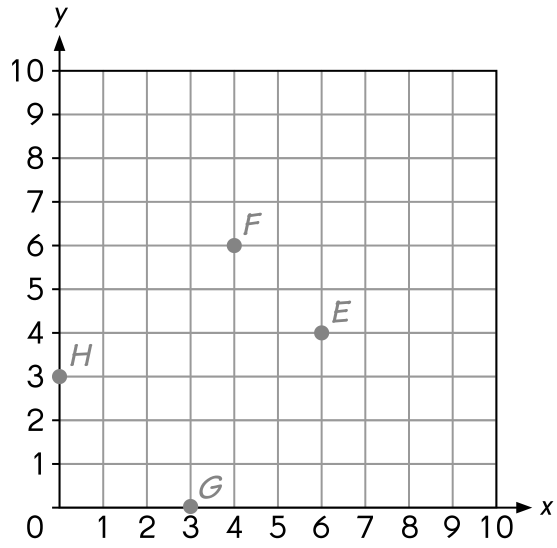
1. P (______, ______) **2.** Q (______, ______)

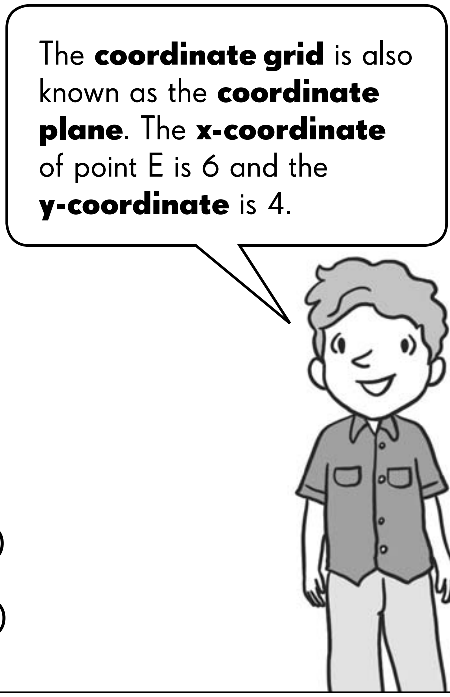
3. R (______, ______) **4.** S (______, ______)

Name: ______________________ Date: ______________

Plot each point on the coordinate grid.

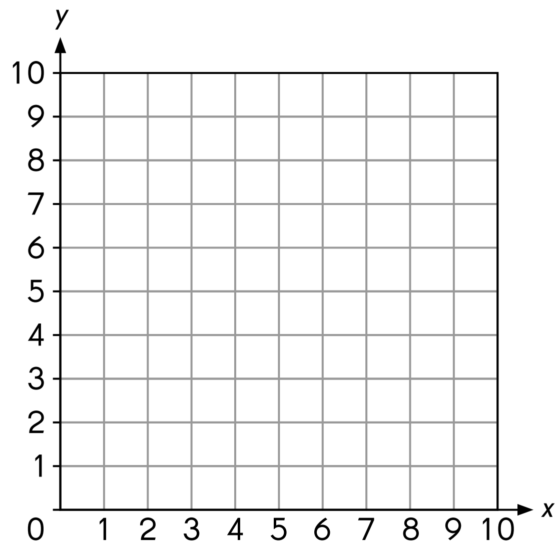
Example





E (6, 4) F (4, 6)

G (3, 0) H (0, 3)



5. T (3, 5) **6.** U (5, 3)

7. V (7, 0) **8.** W (0, 7)

Name: ______________________ Date: ______________

Use the data in the table to plot the graph and answer the questions.

Mandy needs flavored syrup to make drinks for her party guests. The table shows the number of bottles of syrup needed for the number of guests at a party.

Number of bottles of syrup	1	2	3	4	5
Number of guests	8	16	24	32	40

9. How many bottles of syrup does Mandy need when there are 24 guests? __________

10. How many bottles of syrup does she need when a total of 30 guests are at the party? __________

11. Mandy used 2.5 bottles of syrup for a party she held last month. How many guests were there? __________

12. Mandy has 1.5 bottles of syrup left. How many guests can she invite to her next party? __________

13. Mandy invites 20 guests to a party. Later that night, 15 more uninvited guests arrived. How many more bottles of syrup does she need? __________

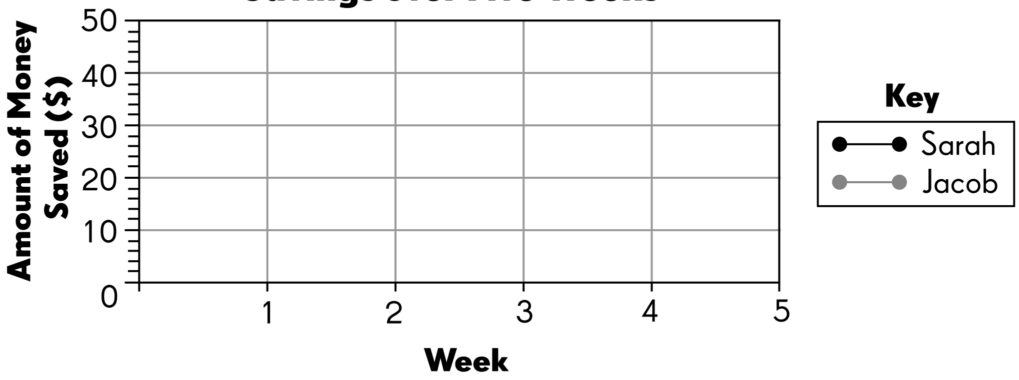
Name: ______________________ Date: ______________

Use the data in the table to plot the graph and answer the questions.

The table shows two children's savings over five weeks.

	Week 1	Week 2	Week 3	Week 4	Week 5
Jacob	\$6	\$12	\$18	\$24	\$30
Sarah	\$8	\$16	\$24	\$32	\$40

Jacob's and Sarah's Savings over Five Weeks



14. In which week were Jacob's savings \$6 less than Sarah's savings?

____

15. How much more were Sarah's savings than Jacob's savings after four weeks?

\$__________

16. How much did Jacob and Sarah earn in all after five weeks? \$__________

17. If Jacob and Sarah saved the same amount of money in Week 6 as they did in the previous weeks, how much would their savings be in Week 6?

Jacob's savings: \$__________; Sarah's savings: \$__________

18. After Week 5, Sarah bought her brother a birthday gift worth half her savings. Who has a greater amount in his or her savings now? By how much?

\$__________; \$__________

Name: ______________________________ Date: ____________________

Worksheet 3 Combinations

Complete.

Example

Joanne has a black blazer, a brown blazer, and a grey blazer.
She has a beige skirt, a tan skirt, and a black skirt.
Make an **organized list** of the possible **combinations** of a blazer and skirt that Joanne can wear.
Draw a **tree diagram** to show the number of combinations.

Blazer	Skirt	Combinations
Black	Beige	Black/Beige
	Tan	Black/Tan
	Black	Black/Black
Brown	Beige	Brown/Beige
	Tan	Brown/Tan
	Black	Brown/Black
Grey	Beige	Grey/Beige
	Tan	Grey/Tan
	Black	Grey/Black

Blazers	Skirts	Combinations
	beige	black/beige
black	tan	black/tan
	black	black/black
	beige	brown/beige
brown	tan	brown/tan
	black	brown/black
	beige	grey/beige
grey	tan	grey/tan
	black	grey/black

Name: ______________________ Date: ______________

1. Jack has a pair of red socks, a pair of black socks, and a pair of green socks. He has 1 blue tie and 1 brown tie. Make an organized list of the possible combinations of a tie and a pair of socks.

Socks	Ties	Combinations

There are __________ combinations.

2. Kim eats yogurt and fruit every day in different combinations.

Yogurts	Fruits	Combinations
	pears	vanilla/pears
vanilla	apples	vanilla/apples
	watermelons	vanilla/watermelons
	grapes	vanilla/grapes
	pears	plain/pears
plain	apples	plain/apples
	watermelons	plain/watermelons
	grapes	plain/grapes

Study the tree diagram.

How many types of fruit does Kim eat? __________

How many types of yogurt does she eat? __________

Name: ______________________ Date: ____________

3. Jill drinks either coffee or tea after a meal. She can choose to have cheese, biscuits, or fruit to go with her drink.

a. Draw a tree diagram to show the number of combinations that she can have.

b. How many combinations are there in all?

Name: ______________________________ Date: ______________

4. XYZ supermarket sells 4 choices of cheese, 5 choices of milk, and 6 choices of crackers.

a. There are __________ combinations of choosing one type of cheese and one type of milk.

b. There are __________ combinations of choosing one type of milk and one type of crackers.

c. There are __________ combinations of choosing one type of cheese and one type of crackers.

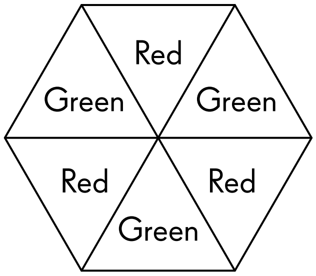
Name: ______________________ **Date:** ____________

Worksheet 4 Theoretical Probability and Experimental Probability

Complete.

Example

Sandra makes a spinner.



What is the theoretical and the experimental probability of an event happening?

Theoretical probability $= \dfrac{\text{number of favorable outcomes}}{\text{total number of possible outcomes}}$

Experimental probability $= \dfrac{\text{number of } \textbf{favorable outcomes} \text{ in an actual experiment}}{\text{total number of trials}}$

Find the theoretical probability of landing on the red section if the spinner is spun once.

Theoretical probability of landing on the red section $= \frac{3}{6} = \frac{1}{2}$

Name: ______________________ Date: ______________

Jamil tosses two coins. The coins land on either a head or a tail.
(H, T) shows a head on the first coin and a tail on the second coin.

1. Write down all possible outcomes. How many outcomes are there in all?

2. What is the theoretical probability of landing a head and a tail?

3. What is the theoretical probability of landing two heads?

4. What is the theoretical probability of landing two tails?

Jess tosses a coin and a cube that is numbered 1 through 6 on its faces.
(H, 5) shows a head on the coin and a 5 on the cube.

5. Write down all possible outcomes. How many outcomes are there in all?

6. What is the theoretical probability of getting a head and an even number?

7. What is the theoretical probability of getting a tail and a number less than 5?

8. What is the theoretical probability of getting a head and a number greater than 3?

Name: ______________________ **Date:** ______________

Sarah tosses a coin 100 times and she gets a head 45 times and a tail 55 times.

9. Find the experimental probability of getting a head.

10. Find the experimental probability of getting a tail.

11. Jenny and Trish throw a cube that is numbered 1 through 6 on its faces. The cube is thrown 45 times by each girl. Use the data in the table to find the experimental probability of each girl getting each number. Complete the table.

Number	Jenny's outcomes	Experimental probability	Trish's outcomes	Experimental probability
1	8		7	
2	9		8	
3	8		8	
4	6		7	
5	5		6	
6	9		9	

Name: ______________________ **Date:** ____________

12. Harris makes a spinner that has 4 equal parts. Two parts are painted red, one part is painted green, and one part is painted yellow. He spins the spinner a number of times and obtains these experimental probabilities.

Red 0.52 Green 0.25 Yellow 0.23

What could be the total number of times he spins the spinner?
There is more than one correct answer.
Using your total number of spins, find the number of times the spinner lands on each color.