Name _____ Class _____ Date _____

13.2 Independent Practice

FL 7.SP.3.8, 7.SP.3.8a, 7.SP.3.8b

Personal Math Trainer
Online Assessment and Intervention

In Exercises 10–12, use the following information. Mattias gets dressed in the dark one morning and chooses his clothes at random. He chooses a shirt (green, red, or yellow), a pair of pants (black or blue), and a pair of shoes (checkered or red).

10. Use the space below to make a tree diagram to find the sample space.

11. What is the probability that Mattias picks an outfit at random that includes red shoes? _____

12. What is the probability that no part of Mattias's outfit is red? _____

13. Rhee and Pamela are two of the five members of a band. Every week, the band picks two members at random to play on their own for five minutes. What is the probability that Rhee and Pamela are chosen this week? _____

14. Ben rolls two number cubes. What is the probability that the sum of the numbers he rolls is less than 6? _____

15. Nhan is getting dressed. He considers two different shirts, three pairs of pants, and three pairs of shoes. He chooses one of each of the articles at random. What is the probability that he will wear his jeans but not his sneakers?

Shirt	Pants	Shoes
collared	khakis	sneakers
T-shirt	jeans	flip-flops
	shorts	sandals

16. **Communicate Mathematical Ideas** A ski resort has 3 chair lifts, each with access to 6 ski trails. Explain how you can find the number of possible outcomes when choosing a chair lift and a ski trail without making a list, a tree diagram, or table.

17. **Explain the Error** For breakfast, Sarah can choose eggs, granola or oatmeal as a main course, and orange juice or milk for a drink. Sarah says that the sample space for choosing one of each contains $3^2 = 9$ outcomes. What is her error? Explain.

18. **Represent Real-World Problems** A new shoe comes in two colors, black or red, and in sizes from 5 to 12, including half sizes. If a pair of the shoes is chosen at random for a store display, what is the probability it will be

red and size 9 or larger? _____

H.O.T. FOCUS ON HIGHER ORDER THINKING

19. **Analyze Relationships** At a diner, Sondra tells the server, "Give me one item from each column." Gretchen says, "Give me one main dish and a vegetable." Who has a greater probability of getting a meal that includes salmon? Explain.

Main Dish	Vegetable	Side
Pasta	Carrots	Tomato soup
Salmon	Peas	Tossed salad
Beef	Asparagus	
Pork	Sweet potato	

_____

_____

20. The digits 1 through 5 are used for a set of locker codes.

a. **Look for a Pattern** Suppose the digits cannot repeat. Find the number of possible two-digit codes and three-digit codes. Describe any pattern and use it to predict the number of possible five-digit codes.

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b. **Look for a Pattern** Repeat part **a**, but allow digits to repeat.

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c. **Justify Reasoning** Suppose that a gym plans to issue numbered locker codes by choosing the digits at random. Should the gym use codes in which the digits can repeat or not? Justify your reasoning.

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Work Area