NAME KEY Period _____

Worksheet 12-8 ** Compound Probability

You spin a spinner that has 12 equal-sized sections numbered 1 to 12. Find each probability.

1. P(3 or 4) $\frac{2}{12} = \frac{1}{6}$

2. P(even or 7) $\frac{7}{12}$

3. P(even or odd) $\frac{12}{12} = 1$

4. P(multiple of 3 or odd) $\frac{8}{12} = \frac{2}{3}$

5. P(multiple of 2 or multiple of 3) $\frac{8}{12} = \frac{2}{3}$

6. P(less than 5 or greater than 9) $\frac{7}{12}$

You roll a red number cube and a blue number cube. Find each probability.

7. P(red 2 and blue 2) $\frac{1}{6} \cdot \frac{1}{6} = \frac{1}{36}$

8. P(red odd and blue even) $\frac{3}{6} \cdot \frac{3}{6} = \frac{9}{36} = \frac{1}{4}$

9. P(red greater than 2 and red 4) $\frac{4}{6} \cdot \frac{1}{6} = \frac{4}{36} = \frac{1}{9}$

10. P(red odd and blue less than 4) $\frac{3}{6} \cdot \frac{3}{6} = \frac{9}{36} = \frac{1}{4}$

11. The probability that Bob will make a free throw is $\frac{2}{5}$. What is the probability that Bob will make his next two free throws? $\frac{2}{5} \cdot \frac{2}{5} = \frac{4}{25}$

You choose a marble at random from a bag containing 3 blue marbles, 5 red marbles, and 2 green marbles. You replace the marble and then choose again. Find each probability.

12. P(both blue) $\frac{3}{10} \cdot \frac{3}{10} = \frac{9}{100}$

13. P(both red) $\frac{5}{10} \cdot \frac{5}{10} = \frac{25}{100} = \frac{1}{4}$

14. P(blue then green) $\frac{3}{10} \cdot \frac{2}{10} = \frac{6}{100} = \frac{3}{50}$

15. P(red then blue) $\frac{5}{10} \cdot \frac{3}{10} = \frac{15}{100} = \frac{3}{20}$

16. P(green then red) $\frac{2}{10} \cdot \frac{5}{10} = \frac{10}{100} = \frac{1}{10}$

17. P(both green) $\frac{2}{10} \cdot \frac{2}{10} = \frac{4}{100} = \frac{1}{25}$

You choose a tile at random from a bag containing 2 tiles with X, 6 tiles with Y, and 4 tiles with Z. You pick a second tile without replacing the first. Find each probability.

18. P(X then Y) $\frac{2}{12} \cdot \frac{6}{11} = \frac{12}{132} = \frac{1}{11}$

19. P(both Y) $\frac{6}{12} \cdot \frac{5}{11} = \frac{30}{132} = \frac{5}{22}$

20. P(Y then X) $\frac{6}{12} \cdot \frac{2}{11} = \frac{12}{132} = \frac{1}{11}$

21. P(Z then X) $\frac{4}{12} \cdot \frac{2}{11} = \frac{8}{132} = \frac{2}{33}$

22. P(both Z) $\frac{4}{12} \cdot \frac{3}{11} = \frac{12}{132} = \frac{1}{11}$

23. P(Y then Z) $\frac{6}{12} \cdot \frac{4}{11} = \frac{24}{132} = \frac{2}{11}$

24. There are 12 girls and 14 boys in math class. The teacher puts the names of the students in a hat and randomly picks one name. Then the teacher picks another name without replacing the first. What is the probability that both students picked are boys?

$\frac{14}{26} \cdot \frac{13}{25} = \frac{182}{650} = \frac{7}{25}$