pg. 777 # 10 – 12, 13 – 29 odd

There are 5 pennies, 7 nickels, and 9 dimes in an antique coin collection. Suppose two coins are to be selected at random from the collection. Find each probability.

10. P(selecting 2 pennies), if no replacement occurs. $\frac{5}{21} \cdot \frac{4}{20} = \frac{1}{21}$

11. P(selecting 2 pennies), if replacement occurs. $\frac{5}{21} \cdot \frac{5}{21} = \frac{25}{441}$

12. P(selecting the same coin twice), if no replacement occurs.

$$\frac{5}{21} \cdot \frac{4}{20} + \frac{7}{21} \cdot \frac{6}{20} + \frac{9}{21} \cdot \frac{8}{20} = \frac{67}{210}$$

Michael is helping his mother do some packing. There are 5 clocks, 5 candles, and 6 picture frames on a table. If Michael accidentally knocks two items off the table and breaks them. Find each probability.

13. P(breaking 2 picture frames). $\frac{6}{16} \cdot \frac{5}{15} = \frac{1}{8}$

15. P(breaking a clock, then a candle) $\frac{5}{16} \cdot \frac{5}{15} = \frac{5}{48}$

Two dice are tossed. Find each probability.

17. P(no 2's) $\frac{5}{6} \cdot \frac{5}{6} = \frac{25}{36}$

19. P(two different numbers) $1 - \frac{6}{36} = \frac{30}{36} = \frac{5}{6}$

A box contains 5 red markers, 4 black markers, and 7 blue markers. Three are selected, one after the other. Find the probability all three are different colors if:

a. no replacement occurs. $\frac{1}{24}$

b. replacement occurs each time $\frac{35}{1024}$

For a bingo game, wooden balls numbered consecutively from 1 to 75 are placed in a box. Five balls are drawn randomly. Find each probability.

23. P(selecting 5 even numbers), if replacement occurs. $\frac{37^5}{75^5}$

25. P(selecting 5 consecutive numbers), if no replacement occurs $\frac{1}{29,170,800} = \frac{71}{75} \cdot \frac{1}{74} \cdot \frac{1}{73} \cdot \frac{1}{72} \cdot \frac{1}{71}$

A standard deck of 52 cards contains 4 suits of 13 cards each. Find each probability if 13 cards are drawn and no replacement occurs.

27. P(all one suit) $\frac{4 \cdot {}_{13}C_{13}}{{}_{52}C_{13}}$

29. P(all face cards) 0